# MEETARY 20 REVIEW



U. S., ARMY COMMAND AND GENERAL STAFF COLLEGE FORT LEAVENWORTH. KANSAS

MAY 1958

VOLUME XXXVIII

NUMBER 2



COMMANDANT
ASSISTANT COMMANDANT Brig Gen F. R. Zierath
DEPUTY POST COMMANDER Col W. W. Culp, Armor
EXECUTIVE ASSISTANT TO THE ASSISTANT COMMANDANT Col J. F. Franklin. Armor
SECRETARY, USA CGSC Col A. S. Buynoski, Arty
ASSISTANTS TO THE ASSISTANT COMMANDANT
RESIDENT INSTRUCTION Col J. L. Frink, Jr., Arty
NONRESIDENT INSTRUCTION Col E. C. Dunn. Armor
COMBAT DEVELOPMENTS

Col V. W Hobson, Inf

DOCTRINE

## **Military Review**

EDITOR IN CHIEF
LT COL RODGER R. BANKSON, INF

MANAGING EDITOR
LT COL GEORGE B. MACAULAY, ARTY

SPECIAL SECTIONS EDITOR Lt Col Robert M. Walker, Arty

SPANISH-AMERICAN EDITION

Editor

Maj Gilberto González-Juliá, Inf

Assistant Editors
Maj Tomás H. Guffain, Inf
Capt Orlando Ortiz Moreno. Inf

BRAZILIAN EDITION
Editor

LT COL SEPASTIÃO FERREIRA CHAVES, ARTY

Assistant Editor
MAJ WALDIR DA COSTA GODOLPHIM, ARTY

Production Officer
LT COL LOUIS RUIZ, CMLC

ath

arty

Arty

Inf

Inf

#### MISSION.

The MILITARY REVIEW disseminates modern military thought and current Army doctrine concerning command and staff procedures of the division and higher echelons and provides a forum for articles which stimulate military thinking. Authors, civilian and military alike, are encouraged to submit articles which will assist in the fulfillment of this mission.



#### POLICY.

Unless otherwise indicated, the views expressed in the original articles in this magazine are those of the individual authors and not necessarily precisely those of the Department of the Army or the U.S. Army Command and General Staff College.

Editor.

The printing of this publication has been approved by the Director of the Bureau of the Budget 19 June 1956.

MILITARY REVIEW—Published monthly by U. S. Army Command and General Staff College, Fort Leavenworth, Kansas, in English, Spanish, and Portuguese. Entered as second-class matter August 31, 1884. at the Post Office at Fort Leavenworth, Kansas, under the Act of March 8, 1879. Subscription rates: \$3.50 (US currency) a year in the United States, United States military post offices, and those countries which are members of the Pan-American Postal Union (including Spain): \$4.50 a year in all other countries.

## MILITARY REVIEW

**VOLUME XXXVIII** 

**MAY 1958** 

NUMBER 2

m or sh

### CONTENTS

Irregular Warfare and the Soviets	3
Area Damage Control	8
The Fenian Foray Into Canada—May-June 1866	16
Logic in Logistics	38
Use All the Staff	43
Keeping Pace With the Future—Molding the Staff  Colonel Walter M. Vann, Artillery	47
MILITARY NOTES AROUND THE WORLD	61
FOREIGN MILITARY DIGESTS	71
A New Nature of War	71
Field Artillery in Atomic Warfare	73
Mobility of Land Forces	80
The Infantry of Tomorrow	84
The Militia Army in the Atomic Age	90
The Division in Atomic Warfare	94
Antitank Defense	103
BOOKS OF INTEREST TO THE MILITARY READER	108

This copy is not for sale. It is intended for more than one reader.
PLEASE READ IT AND PASS IT ALONG

### **IRREGULAR WARFARE AND THE SOVIETS**

Walter Darnell Jacobs

LENIN'S early views on the utilization of the form of partisan warfare contain the core of much of his thinking on armed insurrection. In an essay published in 1906 he stated that the character of partisan military activities should "produce knowledge of offensive and surprise military actions." 1

The idea of the educational value of engaging in partisan warfare, in Lenin's opinion, is supplemented by its value as an example, within reality, of the flexibility required of a revolutionary, conspiratorial organization.

"In the period of the civil war," Lenin continued in his essay (and by civil war he meant the struggle of class against class within prerevolutionary Russia), "the ideal party of the proletariat is a fighting party." Therefore, he considered it necessary to engage in activities which might be militarily inexpedient. The disorganizing tendencies of partisan warfare should indeed be recognized and studied but "every military action in any war to a certain extent disorganizes the ranks of the fighters." One cannot, for that reason, abandon the fight—"One must learn to fight. That is all."

#### Partisan Warfare

The lesson of flexibility and what it means to an insurrectionist group can be

learned from the choice of partisan warfare as a form. Lenin pointed out that:

At different periods Social-Democrats [Communists] apply different methods, always qualifying the choice of them by strictly defined ideological and organizational conditions.

In the course of a few years Lenin and the Communists passed from armed insurrections directed against the Imperial government to holders of power in the Soviet Republic. One of their first tasks was the fighting of a civil war.

That a peculiarly Communist concept of irregular warfare did not develop out of the events of the 1917 November Revolution nor out of the subsequent civil war is due to the following factors.

#### Limited Military Action

The Bolsheviks seized political power in the original instance without the necessity of extensive military action, regular or irregular. In the major cities of Russia, power was seized virtually without military action. Those military clashes which did occur were of short duration and involved limited numbers of troops. The Soviet forces committed were unconventional but their unconventionality varied from place to place. There was no regularity in their irregularity.

The irregular actions of the civil war were on a larger scale and of a less varied nature. The types of irregular action can be divided, for purposes of convenience.

8

Although the Soviet concept of irregular warfare is not specifically contained in any one source, the growth and use of such tactics may be found by examining operations in World War II and previous conflicts

<sup>1</sup> V. I. Lenin o Voine, Armii i Voennoi Nauke (V. I. Lenin on War, the Army and Military Science), Moscow. Voennoe Izdatel'stvo. 1957. Two Volumes, (hereafter cited as Lenin o Voine), Volume I, p. 220.

irreg

code

as f

cent

ity '

endo

forn

ing.

N

Rus

exis

trin

July

leas

par

enc

suc

Tel

22

eve

to 1

mo

occ

ma

pre

sta

Se

era

lar

exa

to

pre

fri

Ge

ev

ple

the

ve

re th

1

S

into two-those occurring in the mountains and those occurring in the plains.

Irregular actions which took place in the plains were restricted largely to the Ukraine. The plains irregulars of the Ukraine were a source of despair to the centralizing tendencies of Lenin and Trotsky.

#### Trotsky

Lenin and Trotsky were attempting to build a military force of the traditional type from the material provided by the Red Guards. The tradition in the Ukraine, however, was with the local atamans and decentralization. These local traditions were castigated by Lenin in his speech of 4 July 1919, "On the Present Situation and the Immediate Tasks of Soviet Power," when he said:

The peasants simply took up arms, chose an ataman and instituted a power of their own there and then. They paid no heed to any central power and each Ukrainian ataman thought he could solve all his country's problems without bothering about events in the capital.

Lenin's attitude was reflected by Trotsky who had said:

It is necessary ruthlessly to cleanse the commanders of the Third Army . . . (I)n some units of the Third Army there are still surviving the habits of the guerrillas

Mr. Walter Darnell Jacobs is a frequent contributor to the MILITARY REVIEW and is the author of "A Soviet Attack Capabil-ity" (December 1956); "What Does the Soviet Officer Read?" (February 1957); and "Mao Tse-tung as a Guerrilla: A Second Look" (February 1958). He was on active duty in the Army from 1942 to 1953. Until September 1957 he was with the Library of Congress where he was responsible for the Exchange Program with li-braries and institutions in the Soviet Union. A graduate of the Army Language School (Russian Course), he has received the Master of Arts degree in Political Science from Columbia University as well as the Certificate of the Russian Institute. He now is at Columbia University studying on a Ford Fellowship.

or atamans to discuss combat orders and to fail, under all kinds of pretexts, in carrying them out.2

Voroshilov, Budenny, and other early Red Army leaders who came from the ranks of the guerrillas later attempted to evolve a concept of military doctrine based on the proletarian character of the force. This doctrine was best put into written form by M. V. Frunze.3 Frunze's doctrine emphasized speed and the offensive. It cannot, however, be viewed as a concept of irregular warfare in spite of the origin of its composers.

#### Creation of Regular Army

In any event, with the establishment of Soviet power the central government began to turn its back on the irregulars. According to Raymond L. Garthoff in his Soviet Military Doctrine, the Soviets called for the creation of a "regular" army on 10 June 1918. There was no provision for incorporation into that army of the traditions of the irregulars.

Neither the official acceptance of the regular army concept nor the later attempt of the Frunze group to put forward a "unified" military doctrine rules out the possibility of the development of a Communist doctrine of irregular warfare. The irregular forces of the mountain areas. especially those of the taiga and the Soviet Far East, did not come under the same general condemnation from Moscow as did the plains guerrillas. But a doctrine of irregular warfare did not come out of the east either. It produced epic heroes of Soviet literature rather than giants of military doctrine.

While no doctrine was produced in the pre-World War II Soviet Union which could be said to be the "official" view on

<sup>&</sup>lt;sup>2</sup> Quoted in Dimitri Daniel Fedotoff White, The

Grouth of the Red Army, Princeton University Press, Princeton University Press, Princeton N. J., 1944, p. 64.

Mikhail V. Frunze, "Edinaia voennaia doktrina i Krasnaia Armiia" ("A Unified Military Doctrine and the Red Army") in Izbrannye Proizvedeniia (Selected Works), Voennoe Izdatel'stvo, Moscow. 1950, pp. 137-159

irregular warfare, a sort of operational code did develop. It can be summarized as follows: irregulars who fight for the central government and accept its authority will receive a temporary blessing; no endorsement of partisan warfare as a form is intended by this temporary blessing.

#### World War II

When the Wehrmacht drove into Soviet Russia in the late summer of 1941, there existed no generally available Soviet doctrine of irregular warfare.

Stalin's famous Order of the Day of 3 July 1941 was not the signal for the unleashing of hordes of previously prepared partisans. Hitler's troops did not originally encounter a hostile Soviet populace steeped in tales of fabled Communist irregulars such as Chapaev, Frunze, Budenny, Chu Teh, and Mao Tse-tung.

Although there was little or nothing on 22 June 1941, by the end of the war—and even earlier when victory seemed certainly to be on the side of the Soviets—a partisan movement of notable scale occurred in the occupied areas of the Soviet Union.

It appears that by the time of the German invasion the Soviet Government had prepared certain official groups (for instance, the Red Army, the NKVD (Soviet Secret Police), and Party leaders) to operate as leaders and organizers of irregular resistance against enemy troops. The examples of early local resistance attest to such preparations. The limits of the preparation are reflected in the very friendly receptions given to the invading German columns by the natives. Whatever the preparation or lack of it, the implementation of the partisan movement on the scale on which it took place is a marvel of organization and supervision.

#### Partisan Movement

From the first days of the war the Soviet authorities realized the value of irregular opposition to the Germans. From the beginning they attempted to establish

some type of central authority over the partisans.

The methods employed included the official organization of the partisan movement under General Mechlis of the Main Administration of the Political Propaganda of the Red Army. General Mechlis issued orders for the composition and employment of irregular units. Command channels of small or isolated units frequently flowed through available Red Army officers, NKVD members, and Party functionaries in the area. Moscow attempted to maintain control by means of improved communications and by making the irregulars partly dependent on the center for supplies. The use of the airplane in partisan warfare is a Soviet "first." In early 1942 the central government of the Soviet Union began the publication and distribution of the guide and reference book, Sputnik Partizana (Partisan's Handbook).

In spite of all these activities the partisan movement did not become widespread or achieve popular progovernmental support until the activities of the German occupiers came to the aid of the beleagured Communists in Moscow.

#### Nazi Policy

Soviet civilians were treated as *Unter*mensch ("subhuman") and the soldiers of the Red Army were told:

The regulations of the Hague Rules of Land Warfare... are not valid inasmuch as the USSR is dissolved. (T)he Geneva Convention for the Treatment of Prisoners of War is not binding in the relationship between Germany and the USSR.

The beginnings of the Soviet partisan movement can be traced to the continued fighting of Soviet troops cut off by the first German thrusts. As Major Howell has indicated, these groups were led by Red Army officers and Party members.

<sup>&</sup>lt;sup>4</sup> Major Edgar M. Howell, The Soviet Partisan Movement, 1941-1944, Department of the Army. Washington, 1946, p. 47.
<sup>5</sup> Ibid., pp. 109-110.

66

pre

acc

saf

pak

Con

mos

link

Sov

stra

"lit

wai

sug

He

clin

viet

be a

der

fore

to

reg

Т

is l

thre

in V

out

reg

Tse

nes

pak

stru

aut

wor

for

litic

of s

the

8 (

Cour

B. H Brac

T

A

V

Initially, the partisan movement did not have the support of the citizens in the area. In *Panzer Leader*, General Heinz Guderian tells of a deeply moving welcome of Germans into Roslavl in August 1941. He adds:

Unfortunately, this friendly attitude toward the Germans lasted only so long as the more benevolent military administration was in control. The so-called 'Reich commissars' soon managed to alienate all sympathy from the Germans and thus to prepare the ground for all the horrors of partisan warfare.

As stated by Alexander Dallin in German Rule in Russia, 1941-1945, the spread of partisan activity in the Soviet Union can be attributed more to hatred of Erich Koch ("Reich commissar" for the Ukraine) than to love of Josef Stalin. Stalin's call for extensive partisan activity did not enjoy popular support until the nature of Nazi policy became known to the citizens of the Soviet Union and to the members of the Red Army.

One result of Nazi policy in the USSR was to force civilians into partisan activities in preference to enduring the rigors of the Koch occupation and to force bypassed and abandoned Red Army soldiers into irregular formations in preference to a questionable prisoner of war status.

Young Communists specifically trained for their tasks represented a third element in the partisan movement. This element was small and relatively unimportant in the over-all irregular movement.

#### Tactics

The Soviet authorities attempted to take full advantage of the fact that large numbers of individuals were drawn or forced into the partisan movement. The tactical concept which issued from Moscow was in the traditional mold. After-action studies almost uniformly indicate that Soviet ir-

GLieutenant General Wladyslaw Ander, Hitler's Defeat in Russia, Henry Regnery Co., Chicago, Ill., 1953, pp. 168-172, 211.

regulars placed an emphasis on surprise, speed, mobility, flexibility of plans and of maneuver, night actions, bases in inaccessible areas, and the need for the support and assistance of the local populace. The most frequently employed offensive tactical means, according to Colonel General V. S. Popov in Surprise and the Unexpected in the History of Wars, were "traps, ambushes on forest roads, ambushes in mountain passes, ambushes at river crossings, and at exits from populated points."

Popov goes to the essence of the partisan tactical concept when he states:

Mobility, flexibility of maneuver based on knowledge of the area, good continuous information of the adversary through their own intelligence and from local inhabitants—all this permitted partisan detachments to know beforehand, without fail, the intentions of the enemy and in turn to attack enemy troops with surprise and unexpectedly on the move and in populated points.

The Soviet concept of the strategy of irregular operations during the Second World War varies in some aspects from previous irregular doctrine although the general comparative view is similar.

#### Political Character

The political character of the movement was its overriding characteristic. It is always difficult to draw a line separating political and military aims and operations. It is even more difficult in operations of an irregular nature. It is practically impossible in irregular operations directed by the Communist Party. Stalin characterized Bolsheviks as a sort of modern-day Antaeus drawing their strength from contact with the masses. Contact with the masses was, not surprisingly, the most frequently emphasized strategic element of the partisan movement in Soviet writings.

<sup>&</sup>lt;sup>7</sup> History of the Communist Party of the Soviet Union (Bolsheviks): Short Course, Foreign Languages Publishing House, Moscow, 1950, p. 447.

"(U) nlike the guerrilla movements in previous struggles," reported a wartime account, ". . . the guerrilla units have safe bases to operate from."8

When the partisan hero, General Kovpak, visited Stalin in the Kremlin, the Communist chief kept repeating, "The most important thing is to keep stronger links with the people." 9

Another trait of identification of the Soviet concept of irregular warfare at the strategic level was the plan to integrate "little wars" of the partisans with "big wars" of the regulars. Captain N. Galay suggests one reason for this integration. He maintains that the anticentralistic inclination among subject peoples of the Soviet Union is great and has been and will be expressed at every opportunity. In order to suppress such inclinations, therefore, the Soviets in the center are forced to coordinate all actions, regular or irregular.10

#### No Authoritative Doctrine

The concept of irregular warfare which is held by Soviet Communists is revealed through observation of partisan actions in World War II. There is no single source outlining the official Soviet views on irregular warfare in the sense that Mao Tse-tung's writings have given the Chinese Communist line. The works of Kovpak, Fiodorov, Popov, and others are instructive. They can hardly be viewed as authoritative in the same sense that Mao's works are authoritative. The explanation for the Soviet lacuna perhaps is more political than military.

The yu chi chan concept in China was consolidative (from the Communist point of view) while the partisan movement in the Soviet Union tended to be centrifugal. The irregulars in China were the force around which Mao Tse-tung and Chu Teh were building the nucleus of their apparatus for the seizure of power. To Moscow the partisan movement was as much an attempt to hold down desertions of citizens and soldiers as it was to organize a supplementary military force. The force of anticentrical irregulars had been turned against a Communist government in Moscow during the years of the civil war. When Mao was expounding his concept of yu chi chan, the Chinese Communists had never held central power and, of course, had no prejudicial opposition to irregulars. For all the romanticizing of him in times of war and stress, the irregular is out of place in a society peopled by Soviet men.

#### Conclusion

The Soviet concept of irregular war appears to be one of congruism. The guerrilla is effective to the extent that he is resourceful, creative, bold, and independent. These are traits which are not conducive to the building of good Communists on levels below the summit. The Soviets, however, are willing to award grace to the irregular. They are not willing to see in him the ideal type.

However, he may be useful against the enemy in a future war. Lieutenant General S. Krasil'nikov had this to say in a 1956 essay:

In wars of imperialism against the camp of socialism, the creation in the rear of the imperialistic front, where it will be possible, of a 'partisan front' will be characteristic. The partisan front is usually formed in the course of war on the basis of popular resistance in territories occupied by the aggressor, but also in colonies and in countries dependent on imperialism which do not want to bear the shameful yoke of slavery and national oppression. However, the conditions of partisan war and us conduct will be different than they were in the last war.

<sup>&</sup>lt;sup>8</sup> Guerrilla Warfare in the Occupied Parts of the Soviet Union, Foreign Languages Publishing House, Moscow, 1943, p. 8. <sup>9</sup> Major General S. A. Kovpak, Our Partisan Course, London, Hutchinson, n. d., p. 79. <sup>10</sup> Captain N. Galay, "The Partisan Forces," in B. H. Liddell Hart, ed., The Red Armu, Harcourt, Brace & Co., New York, 1956, pp. 153-171.

### AREA DAMAGE CONTROL

Lieutenant Colonel Ellis D. Blake, Infantry
Faculty, U. S. Army Command and General Staff College

44 DAMAGE control in military operations consists of measures taken prior to, during, and after a mass destruction attack or natural disaster to minimize the effects thereof." (Field Manual 100-10, Field Service Regulations—Administration, Chapter 15, Paragraph 271.)

Area damage control is not new in military operations except perhaps the term itself. One of the most common forms of area damage control operations is fire prevention and fire fighting. In the early days of our country the commanders of our frontier forts had to make special provisions for fighting fires caused by the flaming arrows of the Indians and oftentimes had to fight fires at the same time they were repulsing an attack on the fort. Similarly, the defenders of the ancient walled cities and fortresses of the Old World required trained squads of stonemasons to make emergency repairs on the walls as they became battered and damaged during the course of the battle.

Damage control in naval operations starts with the design of the ship so that it is properly balanced and compartmentalized to withstand not only the damage inflicted by the enemy, but the pounding of the elements as well. After the ship is launched the crew must be well-trained in the science of damage control.

With the advent of mass bombings and the German V-1 and V-2 rocket attacks during World War II, military commanders were confronted for the first time with extensive damage and greater numbers of casualties in their rear areas. Initially, there was very little organization, either military or civilian, to cope with the widespread damage caused by such attacks. This became particularly apparent after the Allies captured the port of Antwerp and the Germans attempted to destroy it with their rockets. Gradually, out of the initial confusion, an organization emerged which is the pattern for our present area damage control organization.

#### Increased Vulnerability

Since World War II the means available to deliver mass destruction weapons has increased the vulnerability of rear areas materially. Tactical units are capable of rapid reassembly from dispersed formations for short periods at a decisive time and place, and again dispersing to avoid creating a lucrative atomic target. Lines of communications, ports, depots, and other administrative installations do not have this capability. Consequently, they are likely to present atomic targets in spite of attempts to minimize their vulnerability.

Picture the results of an atomic attack in a rear area such as a field army service area or a communications zone. Depots, ports, airfields, railroad marshalling yards, and other inilitary targets seriously damaged or destroyed. Thousands of casual-

The proper conduct of area damage control, extremely important to the commander, has become increasingly vital with the development of nuclear weapons and corresponding increase in rear area vulnerability ties, assiroad ture with and nitu

man

area

Bacont in reto restall ing

mas

aste

In dam the it is sibil selv

real

trol

troo
area
ing
acti

L
tere
fant

Nat 130 plat tive was Jap at t Sta the the

the Arn the itar Tur ulty ties, both military and civilian, requiring assistance. Civilian refugees choking the roads fleeing the chaos. Add to this picture the fallout threatening huge areas with casualty producing radioactive dust and you have a visualization of the magnitude of the problem facing the commander in planning for and conducting area damage control.

#### Basic Concept

Basically, the concept of area damage control operations is simply this—all units in rear areas must be trained and equipped to render assistance to other units and installations which become incapable of helping themselves as a result of an enemy mass destruction attack or of natural disaster. Such operations require centralized control and an organization capable of conducting these operations.

In discussing the organization for area damage control and the responsibility of the rear area units to conduct this activity, it is necessary also to consider the responsibility of these same units to defend themselves from enemy ground attack. Both rear area defense and area damage control require the proper utilization of troops and installations located in rear areas. Planning, organizing, and conducting operations pertaining to these two activities involve the same area and, in

Lieutenant Colonel Ellis D. Blake entered service in 1941 with the 130th Infantry Regiment, 33d Division, Illinois National Guard. He remained with the 130th Infantry serving progressively from platoon commander to regimental executive officer. Following World War II he was with the I Corps Headquarters, Kyoto, Japan. During 1950-51 he was a student at the U. S. Army Command and General Staff College. Upon his graduation from the Regular Course, he was assigned to the G4 Section, Headquarters, Fourth Army, and from 1953 to 1954 served with the First Field Training Team, Joint Military Mission for Aid to Turkey, Istanbul, Turkey. He has been assigned to the faculty of the USA CGSC since October 1955.

general, the same installations and personnel. Since these two operations frequently may be conducted concurrently they must be coordinated closely. These conditions argue strongly for centralized control of both rear area defense and area damage control so that coordination and unity of effort can be attained and the most efficient and effective use can be made of the means available.

#### Organization

The present concept for providing this single agency is to establish within the headquarters concerned a special staff section called a rear area security control center. The chief of this section, called the rear area security controller, is charged with the responsibility of organizing, planning, and conducting rear area defense and area damage control activities for the commander. The rear area security controller develops plans for rear area defense under the general staff supervision of the G3, and area damage control plans under the general staff supervision of the G4. During the conduct of either of these activities the units or elements of units which have been made available either in approved plans or standing operating procedures (SOP's), function under the operational control of the rear area security controller.

What commanders will establish a rear area security control center?

A rear area security control center will be established at the level of command as required. Normally, the following commanders will establish a rear area security control center:

Commanders of communications zones. Commanders of sections of a communications zone.

Field army commanders.

In an undivided communications zone the rear area security control center will be established within the communications zone headquarters. However, in a large

org

ope

an

cor

ma

che

cor

for

the

da

ing

of

of

gr

pla

tie

tas

an

communications zone which has been divided into sections, responsibility for rear area defense and area damage control will be decentralized to the section commanders, that is, each section commander will establish a rear area security control center within the section headquarters.

#### Corps and Division

In the corps rear area and division service area, rear area defense and area damage control normally will be conducted through existing command and staff channels within guidance established by SOP. For example, the division trains commander is charged with this responsibility in the division service area. Administrative activities in the corps and division rear areas are of less magnitude and less likely to invite atomic attack than are the large administrative installations in the field army service area and the communications zone. However, in the case of a separate corps, which would have administrative functions comparable to a field army, it would be appropriate for the corps commander to establish a rear area security control center.

#### Subareas

The size of the area and number of units involved—whether in the communications zone, section of a communications zone, or the field army service area—makes it difficult for the rear area security controller to attain adequate control without some intermediate echelon. This difficulty is overcome by dividing the area into a number of subareas and appointing for each a subarea controller.

The considerations which influence the division of the area into subareas are:

- 1. Location of installations and units by type and population.
  - 2. Terrain.
  - 3. Enemy capabilities.

In considering the location of units and installations the rear area security controller strives to provide each subarea controller with a mean or average capability of conducting rear area defense and area damage control operations. His objective is to ensure that each subarea has a representative share of the population as well as a representative portion of the technical service units by type since different technical service units furnish different type equipment and personnel.

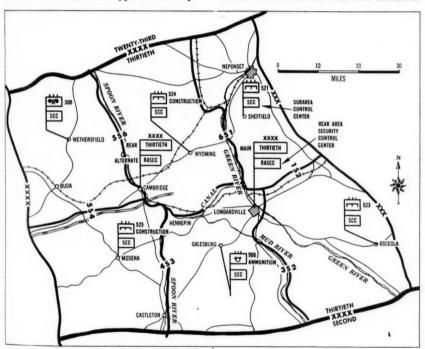
In considering terrain, the rear area security controller will attempt to utilize natural terrain features as a guide in selecting boundaries. He will avoid splitting a subarea by a major terrain obstacle, and he will not divide a major communications center or civilian population center between two subareas.

The capability of the enemy to interfere with operations by employing either ground forces or atomic weapons must be considered. Whenever practicable, each probable target area is assigned in its entirety to a single subarea. In addition, likely areas of enemy activity such as possible drop zones for airborne operations and bases of operations for guerrillas are confined to a single subarea. The division of a typical field army service area into subareas is indicated in the illustration.

#### Subarea Controller

Normally, the rear area security controller appoints the commander of a technical service group to serve as subarea controller. The technical service group headquarters (excluding medical groups) is considered the most suitable unit, currently available, for establishing a subarea control center for a number of reasons. First, it has an existing staff which can, with some augmentation, be used to develop plans to organize the subarea for rear area defense and area damage control and to supervise and direct execution of these operations. Second, these groups already are an integral part of the area communications net. Third, these group commanders are best qualified to understand the capability of service units to organize and conduct area damage control operations concurrently with the performance of their primary mission.

Considering all technical service group commanders the engineer group commander usually is considered the best choice to perform the function of subarea controller. A subarea controller must plan for and coordinate two types of activityother heavy rescue equipment, primarily are engineer tasks. Moreover, engineers have the topographic technical competence enabling them to render technical advice on selection of locations for units and installations. However, in the final analysis the selection of the subarea controller is determined largely by the consideration of factors previously enumerated and the resultant division of the area into subareas.



the local defenses of installations and area damage control operations. Engineer training is oriented more toward the conduct of tactical operations than is the training of other technical services; hence engineer group commanders are better qualified to plan and coordinate local defense activities. Many of the area damage control tasks, that is, fire fighting, rubble clearance, operation of bulldozers, cranes, and

Having established the necessary organization, how is area damage control planned and conducted?

#### Measures Prior to Attack

Area damage control measures to minimize the effects of an enemy mass destruction attack may be considered in two groups: those measures taken prior to an attack, and those taken during and fol-

he

SUC

nee

squ

the

typ

iza

pro

are

of

hav

con

(T

req

per

tair

of t

thr

mee

trol

por

uni

the

nec

thei

time

trol

duct

be 1

tion

This

star

suba

rent the

city

fron

wea

mus

tent

diate

1

1

lowing an attack. The measures which can be taken prior to an attack are as follows:

- 1. Adequate planning.
- 2. Organizing, equipping, and training of area damage control personnel.
  - 3. Dispersion.
- 4. Appropriate use of cover and concealment.

Adequate planning cannot be overemphasized. Of utmost importance is the fact that the rear area security controller must participate with other staff officers in the preparation of plans for opening new service areas or when displacing units within the existing service areas. Such participation ensures that administrative planning is coordinated with planning for area damage control. Area damage control personnel must be organized, equipped, and trained to permit their ready use in area damage control operations. Dispersion and use of cover and concealment, properly planned and implemented, will minimize the effects of enemy mass destruction weapons.

#### Postattack Measures

The measures which may be taken during and immediately following an enemy atomic attack or natural disaster in rear areas are as follows:

- 1. Control of personnel and traffic.
- 2. Fire prevention and fire fighting.
- 3. First aid and evacuation of casualties.
- Protection against chemical, biological, and radiological hazards.
- 5. Emergency supply of food, clothing, and water.
  - 6. Bomb disposal.
  - 7. Initiation of salvage operations.

These measures will restore control, save lives, isolate danger areas, and initiate limited salvage operations necessary to prevent further loss. In their over-all application they aid in the reestablishment of administrative support. However, the actual reestablishment of this support which has been interrupted by enemy ac-

tion is the responsibility of the appropriate administrative and technical service staff officers of the command and not that of the rear area security controller.

#### Use of SOP

To provide a basis for the conduct of area damage control operations, the rear area security controller prepares the area damage control portion of the SOP for the command. This includes such material as information pertaining to responsibilities of the rear area security controller and subarea controllers, the organization and equipment of area damage control squads, the concepts of area damage control operations, and general instructions applicable to any situation.

The concept of area damage control operations can be compared to the operations of a large city fire department. Each large city has a fire chief corresponding to the rear area security controller. The city is divided into zones (sometimes called sections or areas) each zone being supervised by a battalion fire chief. This organization parallels the organization of the rear area into subareas supervised by subarea controllers. Each battalion fire chief is responsible for fire prevention and fire protection within his zone. These responsibilities are performed within the means assigned the zone (one or more fire stations) unless the fire or other damage becomes so extensive as to overwhelm this means. In such cases assistance is provided by the fire chief from other zones within the city in the amount required by the particular situation.

#### Techniques Employed

The same principles and techniques are applied in area damage control operations. Each subarea will have a certain capability to control damage within its area provided by the units and installations located therein. Each unit of company size is required to furnish some type of damage control squad. The units that have the

heavy equipment organic within the unit, such as ordnance maintenance and engineer companies, furnish the heavy rescue squads, and the units that have a preponderance of labor type personnel furnish the labor squads. Each unit furnishes the type squad within its capabilities.

It is, therefore, important, in the organization of the rear area into subareas, to provide a balance between the several subareas with regard to the number and type of service units so that each subarea will have an approximately equal capability to conduct area damage control operations. (There is an interrelationship between this requirement and the requirement for dispersion, so that actually this balance is attained, to a large degree, as the result of the dispersion of units and installations throughout the area.)

The personnel specified in the SOP to meet requirements for area damage control operations normally are only a small portion of the strength of each of the units located in the rear area. However, in the event of extensive damage it may be necessary for some service units to devote their entire effort, for a limited period of time, to the execution of area damage control operations.

#### Damage Control Parties

m

re

ıs.

il-

0-

ed

re-

he

The capability of each subarea to conduct area damage control operations will be reflected on a control panel or operations board in the subarea control center. This capability will be changing constantly as units move from and into the subarea and must be maintained in a current status from day to day. Just as in the case of a zone headquarters in a large city fire department, as soon as an incident (damage) occurs within the subarea, from any cause (atomic or nonatomic weapons, or natural disaster), the subarea must be alerted and the location and extent of damage must be ascertained immediately. The subarea controller then will order area damage control squads, in the number and type required, to report to the scene of damage to commence operations.

In area damage control operations the term "incident" is used to signify the occurrence of damage resulting from a single enemy weapon or from a natural disaster. Each scene of damage or each incident will be placed under the control of a "damage control party" to supervise the area damage control operations. Damage control parties are provided by the service units in the area, preferably by the various technical service battalion headquarters since they have only a supervisory mission to perform. However, the parties may be provided by a company size unit. Damage control parties will consist of an incident officer (commander), one or more officer assistants, and sufficient enlisted personnel to accomplish the following:

1. Establish an incident post, or command post, at the scene of damage. (Incoming damage control squads and other personnel reporting to the damaged area will be directed to report to the incident post.)

2. Command all damage control squads dispatched to the damaged area and supervise all damage control operations.

3. Provide the necessary administrative support such as emergency food, water, and clothing.

4. Coordinate with the medical personnel in treating and evacuating casualties.

#### Conduct of Operations

The SOP will prescribe the composition of damage control parties and designate the units which will provide them. Responsibility for probable target areas, such as a major installation, should be designated in advance so that the damage control party commander can reconnoiter his area of responsibility and become familiar with the installation and location of critical areas before the damage occurs.

or

ar

ex

ve

da

ho

ur

te

lir

se

ap

or

fo

op

ne

CO

pr

co

gis

pla

In the event the damage within the subarea is so extensive as to be beyond the capability of the subarea controller to provide the necessary means, the rear area security controller, as in the case of the fire chief, will direct other subareas to furnish the additional means required.

At the unit level the type damage control squad specified in the SOP must be organized, trained, and equipped so as to be available at all times. This squad may be used either to minimize minor damage within its own unit area or be prepared to move to the assistance of other units or installations within the subarea or to other subareas.

The means to control and minimize damage which overwhelms the capability of an installation or subarea must come from outside the damaged area and be provided by the next higher echelon, that is, subarea, or rear area security controller. It is possible, of course, that damage might be so extensive as to be beyond the resources and capabilities of the rear area security controller to control, or that reinforcements for a particular form of area damage control operations would be required, such as medical evacuation or treatment of mass casualties. In such cases the commander would have to arrange for assistance from some other source outside his own area. (For example, the field army commander normally would request assistance from the communications zone.)

#### Radioactive Fallout

One aspect of area damage control operations deserves special recognition—the problem of radioactive fallout. It is important to recognize fallout as a significant factor in the conduct of area damage control operations as well as the effect it will have on the administrative support mission. As soon as an atomic explosion occurs, whether within or adjacent to the area concerned, a determination must be

made as to whether or not fallout will occur and if so, when and where. When this determination is made, the rear area security controller will be able to warn the units and installations within the affected area so that they may take appropriate action either to get under cover or evacuate the area. Subarea controllers must have this information in order to inform units within their subareas of the area to be avoided in moving area damage control personnel to the area of immediate damage.

Damage control party commanders must have this information so that they can select incident posts outside the fallout area. This information also will be flashed to the military police to enable them to seal off the fallout area in order to prevent other personnel from entering the area and possibly becoming casualties. Many lives may depend upon accurate and timely fallout prediction and dissemination of this information as well as the rapid execution of area damage control operations.

The effect of fallout on the administrative support mission is far-reaching since the units affected must remain in their shelters or evacuate the area, making it impossible for them to contribute to the administrative support mission for a considerable period of time. Supplies and equipment, although not permanently damaged except for sensitive items, cannot be used until the radioactivity decays to the point that it can be handled without the personnel becoming exposed to casualty producing doses of radiation. Decontamination of critical installations or parts of installations may be undertaken within the capabilities of the units to do so; however, decontamination operations are time consuming even when attempted on a limited scale.

#### Radiological Survey

The rear area security controller also is responsible for planning and supervis-

ing the conduct of radiological survey in his area of responsibility. Radiological contamination may occur unexpectedly, particularly in the case of large-yield weapons, since fallout may occur over so large an area that personnel in a lethal area may not even be aware that an atomic explosion has occurred. Radiological survey is conducted continually on a day-to-day basis and even on an hourly and semi-hourly basis when fallout is imminent. The principles and techniques involved in this operation are described in Department of the Army Training Circular 3-2, Radiological Surveys, dated 25 April 1957.

958

oc-

se-

he

ed

ite

ac-

ist

rm

to

n-

ate

ast

an

out

ned

to

re-

the

ies.

and

na-

the

rol

ra-

nce

neir

it

the

on-

and

am-

be

the

the

alty

mi-

s of

the

owime

also

vis-

#### Conclusion

Probable future conditions of warfare are being described as mobile, fluid, fast-moving situations, characterized by small unit actions over widely dispersed areas. In order to support combat forces under such conditions, the logistical support system also is being remodeled and streamlined.

The communications zone and field army service area as we have known them in the past are changing and in their place are appearing a number of logistical support organizations tailored to support a given force. These logistical support areas may operate at widely dispersed locations connected only by the necessary lines of communications. Each such organization probably will be commanded by a logistical command or an equivalent headquarters.

An example of the organization for logistical support in a field army might place a logistical support organization in support of each corps and one to support the troops located in the field army serv-

ice area. The area not required by these logistical support organizations might be commanded by one or more area commands. As the name implies the area commands are created for territorial responsibility to provide security to the lines of communications connecting the logistical support areas and to provide administrative support to units located within the territory under the jurisdiction of the area commands.

Under the organization described in this example, responsibility for area damage control would be delegated by the field army commander to each logistical support commander and each area commander. Each area could be broken down further into subareas, as required, or could operate as an entity. Coordination between areas, of course, would be required for mutual support.

Regardless of the organization provided, the present methods and techniques of conducting area damage control operations appear to be sound and practicable. Unless we are able to provide troops with no other mission but that of area damage control—in other words a professional fire department—the present methods appear to be the best possible solution.

Minimizing and controlling damage resulting from mass destruction attacks is a real problem and deserves the attention of every commander. Our rear areas, which in times past were relatively secure, now have become prime targets, and the next war may well be won by the side that learns how to minimize the damage from these attacks so that the administrative support to its combat forces will not be impaired seriously.

Our defense must rest on trained manpower and its most economical and mobile use.

President Dwight D. Eisenhower

# THE FENIAN FORAY INTO CANADA MAY-JUNE 1866

Colonel George Patrick Welch, United States Army, Retired

A MONG the bizarre events which have, on occasion, enlivened the history of military operations, none compares in genial inanity with the grandiose plans to invade and conquer Canada from United States soil and to hold our northern neighbor as hostage for the freeing of Ireland by the British Government.

The plans are all but forgotten now as is also their single, inadequate implementation by Colonel John O'Neill in his two-day foray across the Niagara River in the late spring of 1866. But that foray occasioned little laughter, if some scorn, and was not without effect in three capitals, causing consternation in Ottawa, irritated dismay in Washington, and raised eyebrows, followed by some second thoughts, in London. What laughter there was found no echo in the homes of those Canadian volunteers killed or wounded in the short action.

#### History of Movement

It is hard to say where it all started, unless we go back to that everlasting catalyst of misery, man's inhumanity to man. A Canadian officer and a participant in the Niagara action, Major George T. Denison, Jr.—writing of the events in his book, The Fenian Raid on Fort Erie—found it necessary to start his explanation of causes with the original aggression into Ireland of Strongbow, the Earl of Pembroke.

Since that enterprise—which might today earn the disapproval of the United Nations—took place in 1169 in the reign of the second Henry, it could well serve as a beginning. However, we can concern ourselves with more immediate causes, coming at once to the year 1858, noting only in passing that during the previous 700 years, relations between England and Ireland had been marked continuously by sporadic rebellion, harsh repression, and mutual distrust.

In that year, in one of the perennial attempts to relieve the Irish people of the unappreciated benefits of English rule, law, property ownership, and economic exploitation, two young gentlemen of Dublin, James Stephens and Thomas Clarke Luby, led their associates in the formation of a secret revolutionary society, the Irish Republican Brotherhood.

They appear to have been idealists, wholly convinced that faith and enthusiasm can metamorphose dreams into reality; a conviction to which history gives so much support that it is difficult from this distance to blame them.

In any case the movement, secret only within the bounds of Celtic loquacity, spread rapidly not only in Ireland, but in America.

Irish immigration to the United States, always present in some degree since the founding of the colonies, had in the fourth and fifth decades of the 19th century swollen to a flood. The later arrivals, those who as the Civil War broke out were second

The Fenian movement in America culminated in an abortive raid on Canada from US soil in an effort to invade, conquer, and hold our northern neighbor as hostage as a step in freeing Ireland from English rule

and carrias an natu south read emplany

Li

newl

both

regin Loui the lings with the f scatt have

> Civil a tot tion It war Conf

of 1

awa

Ances Hurle cal Scal Scal Rela ter cal Publ Defe assig Infa

Tth G1 East Offic Nati came assic

made time was tiller and first generations on American soil, carried an implacable hatred of England as an article of conscience. They gravitated naturally to urban centers, both north and south, where the longer-settled Irish already were exercising a racial talent in employing enough political power to make any national administration wary.

Like other Americans, native-born and newly immigrant rallied to the colors on both sides of the Civil War. Such all-Irish regiments as the 69th New York and the Louisiana Tigers (recruited mainly from the New Orleans docks) accumulated distinguished combat records, not unmixed with hilariously unmilitary conduct over the four long years of war. Individuals too. scattered through both armies, appear to have lived up to the demands made on them. One compilation indicates that of 189 Congressional Medals of Honor awarded by the Army alone during the Civil War to men clearly of Irish ancestry, a total of 81 were earned by first generation Americans-men born in Ireland.

It would follow that at the end of the war there would be in both Union and Confederate service appreciable numbers of soldiers of Irish antecedents, hardened and competent veterans, professionals in all but name. Among them would be a sensible proportion to whom soldiering had become a way of life, leaving them open after Appomattox to any suggestion of military activity which might engage either mind or heart. The freedom of the nostal-gically beloved mother country, no matter how glad they were to leave its miseries, could engage either or both easily.

#### The Fenians

It remained for the American leaders of the Irish independence movement, such as it was, to evoke this engagement by clothing their plans in traditional glory. As a step in this process of what we would now call psychological indoctrination, they seized for their movement the name "Fenian."

Out of the mists of Celtic antiquity the rich epic literature of a poetic people and a sonorous language had built the word into legend. The Fenians of old, sons and followers of Fionn MacCumail (Finn MacCool will serve for phonetic approximation) were, during the third and fourth centuries of our era, military professionals engaged in keeping Ireland (Eire as it was then and is again) free of invasion, when invasion threatened.

The remainder of the time they appear to have spent in feasting—never were there such feasts; in athletic contests—where every victor established a new record every day; or in fighting—which, according to the Ossianic fragments remaining, appeared to be fairly epidemic with or without invaders.

The tone of the legends, transmitted over long generations in Gaelic verse, is Homeric throughout with heroes as petulant and unpredictable as Achilles, kings as domineering and shortsighted as Agamemnon, warriors as steeped in guile as Odysseus, and sometimes, belatedly, as wise as Nestor. The general impression

Colonel George Patrick Welch, United States Army, Retired, served as Public Relations Officer, Africa-Middle East theater during World War II. In 1946 he was Public Information Officer of the Eastern Defense Command and First Army. Other assignments include duty with the 24th Infantry Division in the Far East; commander, 31st Field Artillery Battalion, 7th Infantry Division, in Korea in 1950; G1 Section, General Headquarters, Far East Command; and Public Information Officer, Far East Command and the United Nations Command. In April 1952 he became Chief, Public Information Division, Department of the Army, and held that assignment until June 1954 when he was made Deputy Chief of Information. At the time of his retirement in August 1956, he was commander of the 25th Division Artillery at Schofield Barracks, Hawaii.

<sup>1&</sup>quot;Medal of Honor Men of Irish Birth or Irish Ancestry in United States Army and Navy." Doran Burley. Proceedings of the American Irish Historial Society. Volume XXXII. 1941, p 57 et seq.

ig

a

m

ic

hi

fo

20

D

li

th

W

ha

P

Ir

th

A

in

ic

fil

C

W

ag

fe

ac

or

sp

m

ST

tic

wi

ju

Th

les

th

Ea

ity

pr

off

is that it might have been a glorious time in which to live, provided one could have kept one's skull intact.

These legendary poems of the Fianna na h-Eireann, along with the tales of Cuchulainn and the Knights of the Red Branch, were the roots of Irish folklore, the indispensable heritage of each generation striving to find in ancient glory some recompense for their low estate as the subjugated minions of the Anglo-Saxons from across the water. The phenomenon is not unknown in our own day among the forced satellites of a new imperialism.

The emotional appeal of these legends was real. The tales of Fionn and the Fianna, awakening a thousand racial memories, could make men otherwise cool and practical choke up, physically and mentally, reducing by so much the gap between dream and reality. A vision shining before men is a thing of power, not always to be measured by its realization.

In any case, the name was a stroke of genius, and the movement grew like wild-fire among the American Irish, free after four years of war to allow their thoughts to roam outside their new home. True to the example of its ancient prototype, the Fenian movement in America developed internal lesions which engaged the amused sarcasm of a press more untrammeled then than now. Out of the factional bickering, control of the movement passed to two gentlemen, W. R. Roberts and Thomas William Sweeny. Whatever else may be said about them, none can deny they thought and dreamed in cosmic terms.

#### American Leaders

It is difficult after the passage of the years to get a line on Mr. Roberts. He appears to have been a dry goods merchant in New York City. Newspaper reports of the period occasionally refer to him as "colonel" so we may suppose that he, like so many of his contemporaries, saw service during the Civil War.

Mr. Sweeny stands out more clearly through the mists of time and of not a little calumny. Apparently, he was born in County Cork, Ireland, in 1820, and as a boy emigrated to the United States in 1832. There are indications he served in the Regular Army prior to the outbreak of insurrection. We find him serving as an officer under General Franz Sigel in Southwest Missouri in 1861 and under Grant at the capture of Fort Donelson and at Shiloh.

It may be noted in passing that any survivor of Shiloh had acquired a firstclass idea of what war could be like, although this knowledge does not necessarily include professional competence. Nevertheless, Mr. Sweeny must have been quite a man, taking to his new profession with eagerness and intelligence. In 1862 he appears as a brigadier general of volunteers, fighting apparently with credit through four years of war. In Battles and Leaders of the Civil War, General Oliver O. Howard describes him as "the one-armed Sweeny" commanding a division of General Dodge's XVI Corps in Sherman's Army, and as playing a distinguished role in the capture of Resaca, and later in the assault on Atlanta. Along with many thousand others he appears to have been mustered out of the Army in December 1865.

His attachment to the Fenian cause must have been a matter of long conviction, delayed in execution only by the priority of military service in the cause of the Union, for early in 1866 we find him ensconced with Mr. Roberts in the New York headquarters of the Fenian Society, signing proclamations and other items of psychological warfare as, "Major General, Commanding the Armies of Ireland." He also held the office of Secretary of War in the provisional government of the Irish Republic formed on American soil.

The Fenian plans envisaged the formation, training, equipping, and movement of an army of 35,000 men—all to be veterans of the Civil War from either side—to the Canadian border. Invasion was to take place at selected points from Michigan to New Brunswick. The main effort was to start from Buffalo, cross the Niagara River, seize the Welland Canal, and move on to the occupation of Toronto.

Somewhere along the line another American of Irish ancestry enters the picture—Colonel John O'Neill. In later days he himself appears to have furnished the information that he enlisted in the Regular Army in 1857, served in Utah with the 2d US Dragoons, and later with the 1st Dragoons in California. He denied published reports that he was a graduate of the United States Military Academy at West Point.

Early in the Civil War he appears to have been assigned to the Army of the Potomac under McClellan, and then to Indiana where he was commissioned in the newly organized 5th Indiana Cavalry. Apparently, he served throughout the war in the Federal cavalry, an arm of the service which had considerable difficulty at first in matching the achievements of its Confederate counterpart. A Canadian writer, quoting eyewitnesses of the Niagara foray, describes him as about five feet seven or eight inches tall, of slim, active figure, with light-color hair, blue or gray eyes, ruddy freckled face, and speaking with a soft voice and courteous manner.

It seems unreasonable to apply to Sweeny and O'Neill at least, the description of visionary fanatics unconcerned with sober reality which might with some justice apply to many of their associates. These two among the leaders of this hopeless enterprise were soldiers trained in the then greatest war of modern times. Each had held assignments of responsibility and both were aware of the manifold problems involved in raising, disciplining, officering, equipping, and moving an army,

even when the means were available and no political obstacle intervened. Of the many incredible factors combining in this enterprise, so wholly ludicrous in retrospect, not the least is that it could have gained the loyalty, active participation, and leadership of these two men—two competent soldiers among many dreamers.

#### The Plan

There was, of course, the dream itself. And practical hardheaded men are as susceptible to a dream as others. For Sweeny and O'Neill, as for their colleagues, the dream of Irish independence from England had become a religion, second only to their Christian faith with which, in fact, it was closely aligned. And few will gainsay that religions have a way of making men assay the impossible again and again.

But beyond the dream there were facts that could be misjudged, hopes that could be held with little foundation, and faith that blind chance might work in their favor. Miscalculation when applied to many variables has a way of becoming cumulative, so that the result can be a prodigious error indeed. So it turned out, but it was not clear then to them, to the optimism of their associates, or indeed to many who had neither support nor sympathy to spare for the enterprise.

For a view of General Sweeny's decision and the reasons behind it, the following estimate by Major Denison, a Canadian observer, may serve to indicate that at the time, and under the complex conditions affecting both public feeling and governmental policy among the United States, Canada, and Great Britain, General Sweeny's enterprise lacked neither logic nor some hope of success.

General Sweeny considered that by attacking Canada he was attacking England and attacking her at her weakest point, in a point far removed from her base, and along a frontier of a length dif-

n

p

0

C

e

b

n

y

a

to

ic

01

de

S

d

fı

E

ft

ta

e>

ne

at

ficult to be guarded. By attacking Canada he would be able to bring into play all or nearly all his men, and in all probability, from the feeling some citizens of the United States have against Canada, his force would be largely augmented by recruits from that class. Again, if he was able to take a sufficient portion of Canada to enable him to form a belligerent government, one recognized by the United States, vessels could be sent to prey on British commerce, and the offer might be made to the United States to give up Canada to them on condition of their giving assistance in freeing Ireland, Again, by attacking Canada they might have better opportunities of fomenting a war between the United States and England, which alone would give them any ultimate chance of success. By fighting England in Canada, a large number of English regular troops would be occupied and prevented from fighting against the Fenians in Ireland who, of course, would rise simultaneously with the Canadian invasion, or at any rate, with its probable success. For all these reasons, therefore, General Sweeny and his party decided on directing all their efforts against Canada.

During the last days and nights of May 1866, the city of Buffalo, New York—at the southern or Lake Erie end of the Niagara River—was the center of unusually heavy incoming railway passenger and freight traffic, by no means unnoted in the daily press.

Once arrived, the men, singly or in groups, melted away into the houses of Irish residents of the city. Nevertheless, along the waterfront the saloons welcomed a measurable increase in custom and appear to have accepted philosophically a certain amount of property damage. With commendable prudence the city authorities appear to have maintained the entire police force on standby duty to prevent any serious breach of the peace. Whether for this reason or because of a self-im-

posed discipline among the strangers, none seems to have occurred.

On 30 May an exhaustive summary of the situation appeared in a Buffalo paper. gathering fact and rumor in about equal proportions. On the 31st, a Thursday, both increased enough to concern at least one of the Federal authorities in the city. Mr. William A. Dart, United States Attorney for the northern district of New York, not only wired the mayors of Toronto and Hamilton that some 1,500 Fenians were in the city, ready to march that day or the next, but felt his responsibility 'seriously enough to order the Collector of Customs, Mr. Charles D. Norton, not to clear any vessel out of office hours and during office hours to clear vessels only after an inspection of their cargo. (What Mr. Norton was to inspect for, and what action he was to take if he found anything unusual, does not appear to have been clarified.)

Another gentleman not at all sure of his responsibilities and authority in the face of the mingled facts and rumor was Captain Bryson, United States Navy, commanding the USS Michigan, an armed steamer of the Great Lakes patrol opportunely present at Buffalo. To say as much is no reflection on this officer who, in the course of events, was to exhibit energy, forcefulness, and much commonsense. It reflects only the familiar and highly justified reluctance of a Federal commander to intervene in the domain of civil authority except under rare and strictly delimited conditions. These conditions were not present on 31 May 1866, and historical opinion indicates that his lack of specific orders from the Navy Department resulted from a reluctance in Washington, shared by that department, the War Department, and the Department of Justice, to assume the political onus of action.2

<sup>&</sup>lt;sup>2</sup>Growth of the American Republic. Morison and Commager. Oxford University Press, New York. 1942. Volume II, p 64.

#### Canadian Forces

On 31 May the authorities of Upper Canada at Ottawa were reported as tranquil and prepared for any emergency. Regular British troops were in garrisons at Toronto, Hamilton, London, and Kingston in Upper Canada under Major General G. Napier, commanding the First Military District with headquarters at Toronto. These were small detachments of the 16th and 47th Regiments and of Royal Artillery, symbols of imperial power rather than an effective force.

In addition, approximately 30,000 militia had been organized into various units of the Volunteer Force of Western Canada. Among these were the Queen's Own of Toronto, the 13th Battalion of Hamilton Volunteers, the York and Caledonia Rifles. and other organizations. These units were about what would be expected of volunteer militia of a democratic country long at peace. Of courage there would be plenty; of field equipment little; and of realistic combat training none. The officers, however distinguished in civil life, would lack both the tactical and logistic experience necessary in any military operation beyond a parade.

Whatever the degree of tranquillity among the authorities, General Napier took the precaution of calling up a battalion of the Queen's Own Rifles in Toronto on the evening of the 31st. This unit, under the command of Lieutenant Colonel J. S. Denis, was ordered to proceed on Friday, 1 June, by lake steamer and by rail from Toronto to Port Colborne, on Lake Erie, there to await reinforcements and further orders.

#### Invasion of Canada

No further action appears to have been taken on the 31st. Whatever tranquillity existed, in fact, was shattered rudely the next morning as the news of the landing at Frenchman's Creek reached out over the telegraph wires.

The night of the 30th had been overcast

with rain. But the night of the 31st was clear with a moon only three days past full. As the long twilight of the late spring evening faded, the busy saloons and meeting places along the Niagara River waterfront, and in the north of the city, gradually emptied. Men singly and in groups of two and three drifted quietly north out of the city toward the area known as Black Rock. As the streams converged into the single waterfront road, the groups coalesced, commands were issued, and the men fell into columns with a minimum of disorder. The column formed, the pace was increased, and the rendezvous-a locale called Pratt's Furnace, about five miles north of the city limits-was reached shortly after midnight.

If we wonder now at the discipline and organization of this motley assemblage of about 1,300 men, quietly purposeful on their mission, it is necessary only to remember the training of four years of war which had become for them the ingrained habit which sustains soldiers when the chips are down. Individualists, skeptics, and romanticists these men might be. But no one among them had not learned over and over again that survival in war was a matter of obeying orders, of closing ranks, of keeping quiet when quiet meant living another day or another night, of identifying one's self with the unit, and of submerging one's fears in the general will to fight. The boisterousness, the quarreling, the lubricated conviviality, and the oratory of the waiting period in Buffalo were forgotten. Things were about to happen and the collective memories of a thousand battles told each man that the time for foolery was past.

At Pratt's Furnace the column came to the river bank where by prearrangement two tugs with steam up, and four barges were waiting. Also at hand, by prior arrangement, were nine wagons loaded with arms and ammunition, "government surplus."

Dr.

to

poli

son

ably

the

den

fast

Wi

sta

ger

qui

090

usi

of

por

tle

pos

It is not known for sure how the brief hours of the night were spent. Surely there was some necessity for further organization, for the issuance of orders by Colonel O'Neill to his subordinates, and for their dividing up the column among the barges and arranging for the loading of the arms and ammunition.

Both General Sweeny and Mr. Roberts were reported to be in Buffalo. It would be strange indeed if they were not, and stranger still if General Sweeny at least was not on hand to see his first force successfully launched before returning to Buffalo to arrange the swift dispatch of reinforcements and supplies.

On this night, only three weeks short of the summer solstice, dawn came at 0425. The crossing of the Niagara was completed about 0330, apparently, thanks to the commodious barges, in one trip. The advance guard of the Army of the Irish Republic was on Canadian soil, landing without opposition at a place called Lower Ferry Dock, about a mile north of the then tiny village of Fort Erie, or Waterloo. Pickets immediately advanced to secure the beachbead.

#### Terrain

It is time to examine the terrain which was to contain, and to some extent determine, the operations of both sides during the next several days.

The Niagara River, running nearly due north, marks the frontier which had been crossed. West of the river a square of country sparsely settled with farms and tiny hamlets was bounded entirely by water barriers—the Welland River on the north, flowing east into the Niagara River at Chippawa; the Welland Canal on the west, connecting Lake Erie, at Port Colborne, 17 miles west of Fort Erie, with Lake Ontario. At the town of Welland, eight miles north of Port Colborne, the Welland River intersected the canal from the southwest, and meandered north about three miles to Port Robinson before turn-

ing east. Parallel to the canal the Welland Railway crossed the Welland River at Port Robinson and continued south to its terminus at Port Colborne.

The Grand Trunk Railway, coming from the west, passed through Port Colborne, through the village of Ridgeway, and on to its terminus at Fort Erie, opposite Buffalo. The Erie and Ontario Railroad, coming down from the north, crossed the Welland River at Chippawa and continued on a southeast curve close to the Niagara-River to meet the Grand Trunk at Fort Erie. One north-south road connected Chippawa and Ridgeway through the villages of New Germany and Stevensville. It was called Sodom Road, although there appears at this distance in time no local justification for the name.

River Road, close to the Niagara River, ran south from Chippawa to a point about four miles northwest of Fort Erie then, abruptly changing both name and direction, became the Ridge Road, meandering southwest along a limestone ridge to the village of Ridgeway, crossing just north of the village the Garrison Road and other secondary east-west tracks connecting Fort Erie with Port Colborne. The entire area so enclosed might contain 100 square miles. At that time there was much wooded land separating cultivated fields and small orchards, and several small watercourses emptying into the Niagara such as Frenchman's Creek, near the mouth of which the Fenian expedition landed and set up a perimeter, and Black Creek, farther north, play some part in the action.

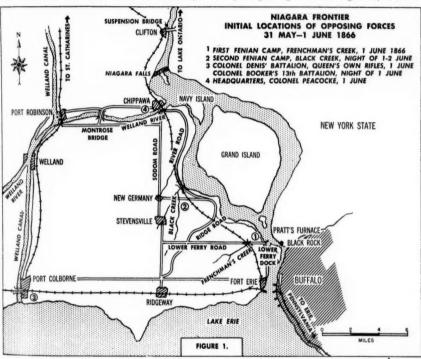
#### Initial Actions

Immediately the landing of men and weapons was completed, O'Neill moved with part of his force south to the village of Fort Erie, then a hamlet of about 750 population. Daylight came as they reached and occupied the village. O'Neill appears to have had considerable detailed knowledge of both the village and its leading men, for he went at once to the house of

Dr. Kempton, the reeve, and, according to Canadian reports, with considerable politeness and assurances of their personal safety acquainted the good, if probably astonished, doctor and his wife with their status as prisoners of war while demanding that the village furnish breakfast rations for 1,000 men immediately.

west along the Grand Trunk Railway. Telegraph lines in all directions were cut, and a watch put on the waterfront across from which the city of Buffalo, the only source of reinforcements and supplies, was stirring to its normal activity.

During the morning, after some difficulty in getting his men together, O'Neill



With the help of a startled hotel kitchen staff and hasty contributions from the one general store, some approach to this requirement seems to have been met. By 0900 the occupying force had breakfasted, using up not only the entire food stocks of the village, but also, according to reports, the hotel's complete supply of bottled goods.

O'Neill moved promptly to secure his position. A reconnaissance party was sent

moved north again, leaving a small guard in the village and joined his main body which was engaged in setting up a camp at the Newbiggan farm on the Niagara shore at Frenchman's Creek.

Astonishingly, the entire day, Friday, 1 June, was wasted by O'Neill at Frenchman's Creek. Some patrols were thrown out, a good many horses requisitioned from nearby farms, and the local inhabitants put to considerable burden in finding ra-

ari

Fei

Bri

two

is i

ble.

sen

goi

to

sou

Un

Bri

Ca

nec

ava

all

Ca

coc

to

he

on

the

ing

ver

as

rel

the

vel

wa

of

at

im

inf

to

the

gu

rai

aft

Sti

the

wa

Th

br

in

(

tions adequate to feed two meals to the nearly 1,300 men of the expedition.

With this delay the entire value of the stunning surprise achieved by the landing was lost. Given O'Neill's experience, there can be but one explanation. His was an advance guard, ordered to land, establish a beachhead, and to prepare to receive and organize reinforcements as they arrived, before proceeding to move against any strategic objective. Obviously, the Welland Canal-but a few miles west across open country completely undefended-represented such an objective, the holding of which would greatly enlarge the beachhead while at the same time deliver a serious blow to Canadian commerce and, therefore, to the economy of Upper Canada. Even as a water barrier protecting the west flank of the invasion from the only source of armed opposition, the rest of Upper Canada, it had immediate tactical importance.

But nothing was done. In retrospect, the decision, probably made before crossing the Niagara River, rested upon the serious miscalculation that the American Government would remain quiescent over a substantial period of time at this outrageous breach of its international responsibilities. The miscalculation could have been made only by the Fenian High Command, founded on a nearly total misreading of their political strength in Washington, and of the extent to which the government was willing to become, even at second hand, embroiled with the British Empire. The doctrine of "volunteers" had not in that day received its modern acceptance.

Perhaps some few reinforcements did arrive during the day. If so, they added nothing but mouths to be fed and could contribute nothing to compensate for the loss of the surprise achieved. What the 1,300 original invaders could have accomplished if 1 June had been used aggressively, not three or four times their number could expect to succeed in later, given energetic reaction by the Canadian authorities. This was not lacking.

#### Canadian Reaction

The news of the landing reached General Napier in Toronto early Friday morning. He immediately called up nearly the entire Volunteer Force of Western, or Upper, Canada. He designated Colonel George Peacocke-a British Regular officer commanding the 1st Battalion of the 16th Foot-to command in the area. His base of operations was at St. Catharines. a town on Lake Ontario near the northern end of the Welland Canal with good rail and water connections with Hamilton and Toronto, With him went about 500 Regulars; 200 of his own 16th; 200 more of the 47th Foot under Major Lodder; and a battery of Royal Artillery under Lieutenant Colonel Hoste. So far as the records indicate, these were all the British Regular troops that could be gathered together in the emergency.

In the meantime, the 400 men of the Queen's Own Rifles of Toronto, who had been alerted the previous night, moved by steamer from Toronto to Port Dalhousie, on Lake Ontario, close by St. Catharines, and from there by the Welland Railway to Port Colborne. During the day, Colonel Denis, commanding the Queen's Own at Port Colborne, was joined by Lieutenant Colonel Booker with the 13th Battalion of Hamilton Volunteers. Colonel Booker, the senior officer, took command of the entire force at Port Colborne.

By the time Colonel Peacocke reached St. Catharines, rumors were flying thick and fast. As is natural at any time, and particularly in an area long attuned to peace, items of intelligence gained stature and detail as they passed from one man to another, soon exhibiting no relation to the original kernel of truth.

The first and most authentic, seemingly, of these rumors to reach Colonel Peacocke's ears on his arrival at St. Cath-

arines was that a force estimated at 800 Fenians was moving on the Suspension Bridge which crossed the Niagara River two miles north of the falls.

One of the troubles with rumors in war is that often they sound extremely sensible. To Colonel Peacocke this rumor made sense. Surely, if the Fenians were ever going to get anywhere, they would have to have a direct connection with their source of reinforcements and supplies-United States territory. The Suspension Bridge, if held by the Fenians on the Canadian side, provided just such a connection, and furthermore the only one available. If they were not striving with all possible speed to seize and to hold its Canadian approaches, in Colonel Peacocke's sober professional view they ought to be. Acting with commendable energy, he took what troops he had and pushed on down the Ontario shore and around the bend of the river to the bridge, leaving urgent orders that all troops converging on St. Catharines follow as soonas possible.

He must have breathed quite a sigh of relief on arriving at the bridge to find the Fenians nowhere around. Inquiry developed that if they were indeed on their way, they had not yet reached the village of Chippawa, two miles south of the falls at the mouth of the Welland River. He immediately pushed on by rail with his infantry, ordering the battery of artillery to follow by road. This was required by the doubt that unloading facilities for guns and horses existed at the Chippawa railway station. He arrived at Chippawa after dark on Friday with 400 infantry. Still no Fenians were in sight.

#### Canadians Hold Bridges

At Chippawa Colonel Peacocke was on the north bank of the Welland River which was crossed at that point by two bridges. The possession and security of these bridges was a matter of first importance in preventing any northward movement of the enemy. Beyond, to the south, somewhere, they surely were. Colonel Peacocke had no cavalry to form a scouting force. His information came from excited, unreliable civilians exaggerating every rumor which had reached their ears. Wisely he decided to hold for the night, to secure the river barrier and the bridges across it, and to see what tomorrow would bring forth. In the meantime, there was much over-all planning to do, and orders to issue to concentrate his growing force. Requiring particular attention was the unit of the Queen's Own 15 miles to the southwest at Port Colborne and, on the opposite side, an enemy of indeterminate but probably substantial strength.

The glow of British history and the light of British Army tradition well and valorously upheld can shine favorably on Colonel George Peacocke. This Regular officer, whom circumstances and the general peace of the Empire had prevented from ever participating in combat in the course of his career, had received his orders in Toronto that morning. By evening he was 80-odd miles away with a small but reliable force of Regulars, holding an important river crossing against an enemy who, on landing that same morning, was a bare 10 miles away. He had, on the whole, shown energy, dash, and an understanding that time was vital. He had done extremely well so far.

Back in Toronto. General wrestled with a general's problems. During the day of Friday, he had no assurance that the reported landing at Lower Ferry was not one of many along the long frontier for which he was responsible. Having dispatched Colonel Peacocke and made arrangements to supply him with reinforcements, while waiting for word of any extension of the emergency, he concentrated on the many problems involved in the hasty mobilization of a militia gallant enough but otherwise unprepared for war. In the back of his mind, too, must

to th

towa

the

sciot

in a

was

both

ble

POI

Was

tain

Gene

New

furtl

Ame

any

Alth

the

puni

A

have been the question as to what would be the reaction to the invasion of the many Canadian citizens of Irish ancestry whose rising on the coming of their compatriots the American Fenians had freely predicted.

#### Fenians Move

In the meantime, O'Neill had waited the entire day at his camp on Frenchman's Creek, within reach of the Niagara River. One can imagine with what anxious interest he watched the river traffic, waiting hour after hour for the welcome sight of more tugs towing barges loaded with men. But no tugs came, nor reinforcements, nor, even worse, word from Sweeny back in Buffalo. As night fell he was forced to the conclusion that for the time, at least, he was on his own.

About 2130 he marshaled his force and moved out of his camp-to the vast relief of the local inhabitants-and started north along the River Road toward Chippawa where, unknown to him, Colonel Peacocke already was established. A few miles north of Frenchman's Creek he turned west on a crossroad leading to the town of New Germany. A mile east of the village a stream called Black Creek crosses the road. Here, in an excellent defensive position, he encamped. From the position he selected, so ideal as to justify the belief in extensive earlier reconnaissance, he could easily reach both the railway from Chippawa to the east, and the only main south-north road, Sodom Road, a mile to the west. In the course of the night his mounted scouts brought him word not only of the force under Colonel Peacocke at Chippawa, but also of the militia force at Port Colborne to the southwest.

O'Neill found himself then in the tactical position held highly desirable by all students of war at that particular stage in its development. He was operating on interior lines and had the enemy divided. With dispatch and energy he could move

against the one, defeat it, and be ready to turn on the other, thus taking on the opposition in sections with his own entire force. He could, in fact, with luck, repeat on a small scale Grant's movements first against Jackson and then against Vicksburg.

There is no reason to believe he did not see his opportunity and act upon it. After an early breakfast he started his command southwest along the Ridge Road where his march was protected on the left by the ridge itself, and on the right by the marshy lowlands and thick brush of Black Creek. His decision to take on the Port Colborne force first rests apparently on his information that they were preparing to move east by rail on Fort Erie where he had left a small detachment in occupation. This he could not permit, if his line of communication with General Sweeny in Buffalo was to remain open. There is room for belief that he was reinforced in this decision by the knowledge that he would be meeting hastily mobilized militia rather than the Queen's Regulars for whom, like any veteran, he had complete, if grudging, respect. Nor can he have missed the political connotation implicit in a quick smashing victory at the first contact with Canadian troops.

#### **Public Reaction**

Meanwhile, as the news of the invasion spread across both Canada and the eastern United States, the public on both sides of the frontier realized that something deadly serious was going on.

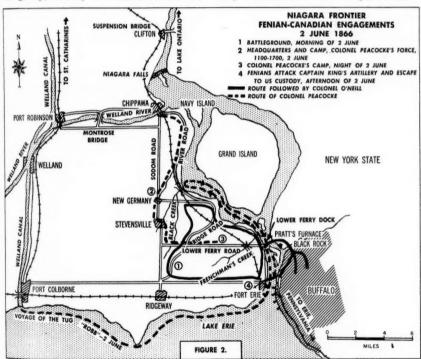
The reaction throughout Canada was, quite reasonably, one of disbelief, confusion, panic, and consternation followed by indignation and a unified determination to resist with all possible means. In the United States, while the Fenian groups openly rejoiced and promised other invasions all along the frontier, and while some editorial comment indicated that the Canadians—and by osmosis, the British—were getting exactly what was coming

to them in repayment for their attitudes toward the Union during the Civil War, the mass of the public was uneasily conscious that the country as a whole was in a fair way to getting involved in what was none of its business.

As this over-all reaction was sensed, both by newspapers of the more responsible group, and by the Administration in not prevent the taking of sound and honest decisions to maintain the dignity of the United States by preventing her territory from being a base for attack against a friendly neighbor.

#### Condition of Canadian Militia

Under the conditions, the Canadian military authorities moved with speed and ef-



Washington, orders were issued to Captain Bryson, on the USS Michigan, and to General Barry, commanding the western New York Military District to prevent further reinforcement of the Fenians from American soil and, if possible, to arrest any attempting to retreat from Canada. Although fear of political reprisals by the Irish-American vote tempered later punitive action by the Government, it did

fectiveness. Nevertheless, the condition of the militia left much to be desired. Men moved without rations, indeed without mess equipment, which had never been issued. Many had never fired their small arms, and others had fired only blank ammunition. Ammunition itself was in short supply. Blankets, tentage, and other field equipment were not available, nor was there available the back harness of the period in which men rolled up their overcoats when not needed. One result of this was that because of the heat of the first two days of June, many Canadian soldiers discarded their overcoats only to find at night that the chill winds of the north could return with darkness. There were no exclusively military facilities for even short-range communication, and dependence had to be placed on civilian telegraph lines. Under the circumstances, including the unfettered ability of the newspapers to report the mobilization and movement of units as they occurred, secrecy was nonexistent, and noncombatants apparently talked freely, dispensing rumor, gossip, and a personal desire to please both sides.

uncertainties with Recognizing the which the Canadian command was plagued, it is not surprising that all knowledge of the whereabouts of the Fenian force was lost as around 2200, 1 June, it left the River Road and turned west. When it was next encountered on the following day, two miles out of Ridgeway, it was the beneficiary not only of its tactical position, but also of a first-rate mixup in orders and actions by the Canadians.

#### Colonel Peacocke's Plan

Back in Chippawa this Friday evening, Colonel Peacocke had his problems. Information had arrived in sufficient detail to make him believe that the Fenians were encamped at Frenchman's Creek, a mere nine miles south, and that they numbered at least 1,200 and perhaps 2,000 to 3,000. He must have been uneasily conscious that his enterprise and energy had brought him to a forward position with a mere 400 men reinforced, it is true, by a battery of artillery. He would not need much more to ensure that his sentries and outposts were alert and his men, even in sleep, ready for an emergency.

But this was the least of it. He had been informed of the plans made by General Napier to reinforce him, and expected substantial increase in strength with the coming of Saturday morning, 2 June. In the meantime, the other force already in the field was across the peninsula and the enemy in between. Professional that he was. Colonel Peacocke easily could see the danger. It was essential in his mind that he combine his force and place it in a position where it could move in any direction, while remaining between the Fenian forces and the Welland Canal. Looking at his rather sketchy map-it was a post office map, the only one available-he put his finger on the town of Stevensville, six miles due south of Chippawa by the Sodom Road and a mere three miles north of the Grand Trunk Railway as it passed through the hamlet of Ridgeway halfway between Port Colborne and Fort Erie. If he could unite his force at this point, he would be in adequate strength to meet any threat O'Neill could offer. His task, as he saw it, and time has not proposed an improvement on his vision, was to:

- 1. Protect the Welland Canal.
- 2. Prevent a movement north through Chippawa to the Suspension Bridge, and to prevent further reinforcement of the enemy.
- 3. Confine the Fenian host in the smallest area possible, thus limiting the damage they could do.
- 4. Defeat and capture the enemy force, if possible, and to prevent its escape either into a larger field of operations in Canada, or back into the United States.

To accomplish these ends he had the force directly under him, the reinforcements by now moving in swelling numbers into St. Catharines and the force of the Queen's Own Rifles and the 13th Hamilton Rifles at Port Colborne. He sent off two orders.

The first was to his base at St. Catharines, ordering the movement forward to his present position at Chippawa of all ready reinforcements as early in the morning as possible, carefully specifying that

they them time breal Th Color him terns

ance at P patro north force alrea

Th

junc

Colo

he c

mine

his of The S. A ular from lection TI succe at P the

adeq did leav base road mee

day

ville

know land ville road

ing

road gag his they should carry a day's rations with them, since his own scheduled departure time of 0600 would permit no delay for breakfast.

The second was an urgent telegram to Colonel Denis at Port Colborne, telling him to send a detachment aboard the International Ferry Boat when in accordance with earlier instructions it arrived at Port Colborne from Buffalo, and to patrol the Niagara River from Fort Erie north, both to prevent the arrival of reinforcements and to prevent the Fenians already in Canada from escaping.

#### Captain Akers

The further problem of arranging the junction of his force and the balance of Colonel Denis' and Colonel Booker's troops he considered so delicate that he determined to send an officer to explain both his orders and the purpose behind them. The man he selected was Captain Charles S. Akers, Royal Engineers, a young Regular officer sent to Colonel Peacocke's staff from Toronto. It was an unfortunate selection.

The orders given Akers to carry were succinct. Colonel Booker and his command at Port Colborne, less the detachment for the Ferry Boat, were to move out Saturday morning, 2 June, to arrive at Stevensville at 1000 to 1100. Cursed with an inadequate map, Colonel Peacocke carefully did not specify the route to be followed, leaving it to Colonel Booker's judgment, based on his knowledge of the terrain, of roads, and conditions he might have to meet. He suggested to Captain Akers, however, that probably the best route, ensuring against accidental contact with the enemy whose present whereabouts was unknown, would be back north up the Welland Canal to a point due west of Stevensville, then across country by secondary roads. He made it clear he wanted no engagement with the enemy until union of his forces had been affected.

Armed with these instructions from the

senior commander on the field, Captain Akers took off for Port Colborne by returning to St. Catharines and then going down the railroad paralleling the Welland Canal. He arrived at Port Colborne about 0130 on the 2d, going immediately into conference with Colonel Booker of the 13th Hamilton Rifles and Colonel Denis of the Queen's Own.

He discovered that the International Ferry Boat had not arrived, but that in its absence the tug Robb, commanded by Captain MacCallum who not only owned the tug but commanded the Naval Company of Volunteers at Dunnville, some miles west of Port Colborne on Lake Erie, had been ordered to substitute.

What followed is best described in the words of Major Denison:

c... there was the commanding officer's plan changed by his subordinates almost at the moment of execution. The three officers whom he had charged with the execution of his orders, even including the staff officer who carried them, coolly forming themselves into a council of war, aided by a customs officer, and unitedly deciding on a plan which has been previously shown to be absurd, a plan for cutting off their [the enemy's] retreat to the east but leaving the whole country open to them on the west, as well as uncovering the Canal they were sent to protect.

#### **Erroneous Information**

Although there exists no slightest justification for the conduct of these three officers, some explanation is possible. At 2200, some hours before Captain Akers' arrival, the Collector of Customs at Fort Erie, a Mr. Graham, had arrived at the camp. He was full to bursting with both news and ideas for an offensive. At 1800 he had visited the Fenian Camp at Frenchman's Creek. He estimated the number at about 700—a good 40 percent discount of the actual—and volunteered the informa-

tion that since they had been drinking all day, they would fall an easy prey to an attack. (While he was giving this report the supposedly drunken Fenians, in good order and complete silence, had vacated their camp and were on the road north and west to Black Creek.)

Mr. Graham, it appears as one reads between the lines, was reasonably representative of that type of enthusiastic and irritating military amateur who is convinced that moving troops is no harder than making lines on a map. To him it obviously was easy to get some 800 troops on the road in the darkness, march 15 miles along indifferent roads through areas peculiarly susceptible to ambush, and at the end of the march to fall, fully fresh, well-disciplined, and completely organized, upon an armed camp of tough veterans who had not survived four years of the Civil War by drinking at the wrong time.

Colonel Booker and Colonel Denis demurred. They were under strict orders to avoid any engagement with the enemy, if met, until further orders were received. No orders had yet come. But Mr. Graham was persuasive and not above indulging in emotional appeal. As part of his tactical argument he told them both that undoubtedly they and their volunteer troops were being held back so that the Regulars under Colonel Peacocke could steal all the glory.

#### Unauthorized Change

Somewhere, Colonel Denis, whose record indicated that he was less of a combat soldier than a peerless adjutant and paperwork man, was won over. He added his arguments to those of Mr. Graham. Colonel Booker, either worn out with argument or tempted by easy glory, gave in. The command was alerted and moved to waiting cars on the Grand Trunk Railway for the first part of the journey to Fort Erie. A telegram was dispatched to Colonel Peacocke stating that he, Colonel Booker, had given orders, subject to the

latter's approval, to move at once on Fort Erie and the enemy. Knowing the state of telegraphic communication, and his own readiness to move at once, it is difficult to know when he expected or where he expected to receive Colonel Peacocke's yea or nay.

This was the situation into which Captain Akers stepped with all the  $\ell lan$  of youth, the prestige of the Queen's Commission, and a military education which somehow had missed the fundamentals of obedience to orders. The result was enough to whiten the hair of any experienced professional.

Among the four of them a tactical nightmare was dreamed up as a modification of Graham's original suggestion. Denis and Akers, with the Welland Garrison Battery under a Captain Richard S. King reinforced by Captain MacCallum's Navy reservists from Dunnville, would leave at once on the tug Robb for Fort Erie and a reconnaissance down the Niagara as far as Black Creek. Colonel Booker, with his entire command, was to wait until the morning, then proceed by rail to Fort Erie to arrive there at 0800. By that time the tug would have returned to Fort Erie with information as to the whereabouts of the enemy-supposing they still were visible from the river.

The quadrumvirate was kind enough to include Colonel Peacocke in its plans. In the telegram announcing their plan and requesting approval these junior officers gratuitously proposed that the commander move his immediate force down the River Road from Chippawa, and when the enemy was caught between both forces to make a combined attack. The tug Robb would play a yeoman part in this simple maneuver, keeping communication between the two forces while preventing both the escape of the enemy and his reinforcement. The telegram completed and dispatched, Captain Akers and Colonel Denis cheerfully boarded the tug and sailed east, leavir expec

His Colon His rebrevit

me:

it.
rec
The
Colbo
Booke
the a
eleme
the m
ville.
going
the or
plan

miles

ville.

that

force

camp

Ridge

In havin of the Unlos half inforstart discorration haven

start the manoth Colbo Book leaving Colonel Booker to await the surely expected enthusiastic assent of Colonel Peacocke to this change in his plans.

#### Colonel Peacocke Disapproves

History does not give us any details of Colonel Peacocke's reaction to this action. His reply is on record, a model of military brevity not unmixed with restraint:

Chippawa, 3.45AM. Have received your message of 3AM. I do not approve of it. Follow original plan. Acknowledge receipt of this. George Peacocke.

The arrival of this telegram at Port Colborne about 0430 on the 2d left Colonel Booker no choice. It is not clear whether the absent Akers had emphasized the time element desired by Colonel Peacocke for the meeting of the two forces at Stevensville. In any case, Colonel Booker was not going to be late. At about 0500 he gave the order for the loaded train to start. His plan was to disembark at Ridgeway, eight miles east, and march north to Stevensville. Neither he nor any other officer knew that at nearly the same time the Fenian force was marching silently out of its camp on the Black Creek, and taking the Ridge Road toward Ridgeway, an easy five miles away.

#### Canadian Move Delayed

In the meantime, Colonel Peacocke was having his troubles at Chippawa. The first of the reinforcements arrived around 0430. Unloading from the train took about a half hour. It was when Colonel Peacocke informed the officers that he intended to start south in an hour, at 0600, that he discovered the new troops had brought no rations "as they were unprovided with haversacks in which to carry it."

Seeing no recourse except to delay his start until the men had somehow been fed, the much-tried Colonel Peacocke got off another message to Colonel Booker at Port Colborne. This message ordered Colonel Booker to delay his arrival at Stevensville

until between 1100 and 1200 and added the sound advice which should have had the standing of an order:

Be careful in feeling your way for fear obstacles should prevent a junction; if possible, open communications with me. I will do the same. George Peacocke.

But Colonel Booker already had left Port Colborne. A Mr. McGrath, General Manager of the Welland Railway at Port Colborne, read the message as it arrived and fully aware of its importance took a hand car and with a Mr. Stovin helping on the handles, took off after the eager warrior. They met the returning empty train five miles out of Port Colborne. Mr. Stovin was charged to get the message on to Colonel Booker by all possible means. He did so, delivering it about 0730. But it already was too late.

#### Battle of Ridgeway or Limestone Ridge

In the course of Friday's scrounging around Frenchman's Creek, Colonel O'Neill had acquired some 40 horses. He chose a white one for himself, mounted his other officers, and organized a small scouting force from his cavalry veterans. These scouts were well ahead of the main body as it proceeded down the Ridge Road in the fresh early morning of 2 June. They were far enough ahead as the column neared Ridgeway to observe the halting of Colonel Booker's train and the disembarking of the Canadian troops. Colonel O'Neill prepared at once to meet this unsuspecting enemy from a strong defensive position. It was ready at hand. He deployed his force on high ground with good cover to the east of the Ridge Road and sent a thin line of skirmishers forward to a secondary east-west road just north of the main east-west Garrison Road. The skirmishers hastily put up a protective screen of fence rails on the south side of the road.

In the meantime, Colonel Booker's command formed in column. Order of march

Gil

pre

ord

Bu

the

dis

sui

dov

Th

in

sis

nia

ker

Col

litt

abl

for

tha

for

pro

cha

tas

nes

imi

wh

exp

mu

to

Fer

cas

tur

the

oug

par

I

col

Chi

Ste

loca

for

tee

mil

and

It 1

of

Ste

ter

-

was determined by seniority of organization which now gave the leading position to the Queen's Own Battalion-with 10 companies-since the defection of Colonel Denis under command of Major Gilmor. Major Gilmor sensibly selected his 5th Company which was armed with new Spencer rifles as advance guard. Behind the Queen's Own marched the York Rifles, one company, then the 13th Battalion, and lastly, the Caledonia Rifles forming the rear guard. Altogether they made quite a marching column moving along the narrow dirt road into steadily higher ground, quite unconscious of the waiting, partially concealed enemy.

O'Neill could have done better. With his experience this closed up column was an open invitation to slaughter. He easily could have moved his men up into the high ground paralleling the road on the east, held them in concealment until the unsuspecting column was covered fully, and then opened short-range, murderous fire on the entire column-easily, that is, only because the ground and the factor of complete surprise favored it. But undoubtedly he had his problems too. He could not have had the time to shake down his individual volunteers, veterans though they were, into the discipline and control such an ambush would have required. Probably his experience told him not to try. In retrospect it is just as well, since the additional slaughter would have proved nothing. But the Canadian column, mishandled as it was, escaped another Trasimeno only because the invading enemy was not yet up to arranging it.

As it was, the Canadian advance guard, the 5th Company of the Queen's Own, was alert enough to discover the line of skirmishers awaiting their approach. Major Gilmor immediately spread his command out in open order on both sides of the road, and sent his Highland Company into the woods on the right to protect that dangerous flank. In extended order, preceded

by a line of skirmishers, the Canadians moved forward boldly.

Experienced commanders know well the contagious bravery of partially trained troops in their first combat action, and are careful to restrain enthusiasms and recklessness based on sheer ignorance of what a bullet or shell can do to the human body. That knowledge comes later. But here there were no experienced officers, only gallant gentlemen sharing the infection of their troops. They drove in the Fenian skirmishers and marksmen across 300 yards of rising ground between the Garrison Road and the next crossroad north. Here, they met the sustained heavy fire of the main Fenian body and the battle broke into isolated struggles with each Canadian company acting largely on its own. If Colonel Booker, who about this time was receiving from Mr. Stovin Colonel Peacocke's warning about feeling his way carefully, had ever had control of the situation, he now lost it.

As in many battles, it was the unforeseen that determined the outcome. O'Neill, seeing the breakup of control on the Canadian side determined to attack with his main body. In order to get them moving he, on his white horse, and other officers, with his mounted scouts acting as messengers to various parts of the Fenian force, galloped out in front. Immediately someone on the Canadian side raised the cry of "Cavalry! Look out for cavalry!" The cry was taken up, passed back, and accepted by Colonel Booker who gave the order to prepare to receive cavalry. The bugles took the order up and passed it on. The Queen's Own bugles passed on Major Gilmor's order to form squares.

In the tactics of the time this was never an easy order to execute and under the conditions of this affair impossible without confusion. Troops, trying to obey the order, turned their backs on the enemy and with intervening fences impeding their progress stumbled over each other. Major Gilmor, who seems to have kept his head pretty well throughout, soon saw what the order was doing and countermanded it. But the damage was done. Far in the rear the 13th Battalion in reserve began to disintegrate under the impression, presumably, that they would soon be ridden down by a horde of wild Irish horsemen. The infection spread toward the front and in a few minutes, without too much assistance from the probably amazed Fenians, the Canadians were in retreat. They kept retreating until they reached Port Colborne.

The delighted Fenians pursued only a little beyond Ridgeway where O'Neill was able to gather them together to get ready for his next move. Knowing, or suspecting that Colonel Peacocke with a substantial force was somewhere north of him and probably moving down, he weighed the chances of another victory against the task of whipping his own men into readiness again, and decided in favor of an immediate movement east to Fort Erie. where, if things were going well, he could expect reinforcements of men and ammunition; if not, his line of retreat back to the United States would be open. The Fenian column, carrying its own minor casualties and escorting a few prisoners, turned east on Garrison Road, parallel to the railway. At Port Colborne a thoroughly demoralized Colonel Booker prepared for a last-ditch stand.

In the meantime, Colonel Peacocke's column was on its way southwest from Chippawa toward his planned junction at Stevensville. The road selected for him by local guides was extremely poor, making for hard going as the day grew hot. Canteens were among the missing items of militia equipment. Men started falling out, and the line of stragglers grew steadily. It was noon before he reached the village of New Germany a half mile north of Stevensville. By this time, unable to intervene or to help, he had word from Colo-

nel Booker, first of being engaged with enemy near Ridgeway, and second, that he was retiring to Port Colborne. Colonel Peacocke, knowing the orders he had given. knowing that what had happened was a result of direct disobedience of those orders by Colonel Booker, can be pardoned for any excessive irritation he might have felt. At the same time, he must have been uneasily aware that the victorious Fenians were somewhere on his front and might well turn on his column. He went into camp, set up a defensive perimeter, and ordered his rather bedraggled force to dinner. Still without cavalry, he lacked accurate information of the whereabouts of the Fenians. His caution, although much criticized by the outraged Canadian press after the event, seems wholly justified.

In the meantime, Colonel O'Neill was marching in some semblance of order with his jubilant, confident Irishmen on Fort Erie. To understand what he was to meet there, we must go back to the adventurous Colonel Denis, and the irrepressible Akers, and their warship, the tug *Robb*.

#### Skirmish at Fort Erie

It will be remembered that at 0430, 2 June these two gentlemen, reinforcing each other in a cavalier disregard for both duty and orders, had boarded the tug at Port Colborne along with a small force consisting of the Welland Battery, about 50 men, without guns, under Captain King, and about twenty-five of the Naval Company under Captain MacCallum, and set out for Fort Erie and points north along the Niagara River. They expected, in accordance with the tactical monstrosity they had concocted with Colonel Booker, to rendezvous with his force at Fort Erie at 0800.

They carried out their reconnaissance of Frenchman's Creek from the river, saw that the enemy had decamped, and kept on north to the mouth of Black Creek. There they went ashore and discovered

tre

ou

re

co

pr

SO

T

in

of

th

do

m

bo

pi

ar

ch

tu

al

be

SC

ir

a

tl

la

ir

from the excited inhabitants that the enemy had moved on, no man knew where. Perhaps mystified by this first experience with the vagaries of war, they returned to Fort Erie to await Colonel Booker's arrival. As time passed and the latter failed to show up, the two tacticians decided, with some logic, that Colonel Peacocke had disapproved their plan and restrained Colonel Booker to the original. But still they could win the war singlehanded. Colonel Denis disembarked the artillery battery, broke it into two strong forces of about 25 men each, and sent them north on two parallel roads about a mile and a half apart under the respective commands of Captain Akers and King. By sheer good luck neither party ran into any of the enemy, except a few stragglers whom they took prisoner. When the two lonesome groups coalesced at Black Creek, after a six-mile march, Colonel Denis on the tug, took them back on board, secured his catch of Fenian prisoners below, and returned to Fort Erie.

Here a period of indecision appears to have ensued during which the tug was moored to the dock. The next decision was on a par with those preceding. Colonel Denis proposed to disembark the artillery battery under Captain King, and leave him in position in Fort Erie while he and Akers took the tug around again to Port Colborne to see what had happened.

Captain King vigorously demurred, as well he might. While the discussion, if it were not an argument, went on, word reached the town that a battle had been fought on Ridge Road, that Colonel Booker's force had suffered a disastrous defeat, and, worst of all, that the Fenians were coming in full force from their victory toward Fort Erie.

Among the many rumors of two exciting days, this one happened to be true. But neither Colonel Denis nor Akers appears to have grasped its significance. After some vacillation, which included the re-

embarkation of the artillery, Colonel Denis ordered the whole force, including some 18 men of the Naval Company, ashore again to take up positions just west of the town. Akers calmly borrowed a horse and buggy and started down the railroad west of the town to the outlying telegraph office to see if communications were yet open with Port Colborne. While on this errand he was cut off by the Fenian advance and exercising sound judgment took off at full speed for Port Colborne along the lake shore. Arriving there, with confidence apparently undiminished, he accepted the demoralized Colonel Booker's invitation to assume command.

Colonel Denis watched the force under Captain King and the naval men under Captain MacCallum march west and make almost immediate contact with the Fenians approaching not only in front but on the flank. This was too much for Colonel Denis who, accompanied by two artillerymen, promptly fled north along the river. He found shelter and concealment in a Mr. Thomas' house, changed his clothes, and escaped again just in time to avoid the capture he might have shared with the two enlisted men. Late that night he fell in with Colonel Peacocke's force.

But Captain King and Captain Mac-Callum were left to fight. And fight they did, inflicting in the course of furious and sometimes hand-to-hand encounter more casualties on the Fenians than the latter had suffered at Ridgeway. Stubbornly, under King's leadership and fighting all the way, the tiny force of artillerymen retreated toward the dock, only to find that the skeleton crew aboard the tug, to avoid capture, had cut their moorings and were drifting in the channel. King, badly wounded in the leg, rolled off the dock into the water from which he was afterward rescued and, with Colonel O'Neill's permission, was sent to Buffalo for treatment. Captain MacCallum with his naval reservists also put up a stubborn fight, retreating slowly along the river road until, out-distancing their pursuers, they could rejoin the tug *Robb* now under partial control. The rest of King's men were taken prisoners.

1

2

1

e

1

e

e

t

"The result of this battle," says Denison, "was the loss of the whole expedition. The two commanding officers were wandering about the countryside, the main body of men captured or lying wounded about the village, the captain of artillery struck down with the loss of a leg, the tug almost denuded of men and the few left [on board] so hampered with a lot of useless prisoners as to be unable to undertake anything."

#### Fenians Return to US

Thus O'Neill had his second victory in a day. For a time he was master of Fort Erie and could look across to Buffalo where the waterfront was crowded with cheering onlookers who somehow never turned into reinforcements. It seems probable that communications were established between O'Neill and General Sweeny or someone else exercising Fenian authority in Buffalo. At one time during the day about 2,000 men were loaded on barges on the Buffalo side. But a quiet warning, relayed from Captain Bryson of the Michigan, appears to have quenched any existing enthusiasm for the excursion across a mile of water. The men were disembarked among loud protestations of anger at the United States Government's unreasonable position.

These plaints were taken up by the Fenians throughout the north and east with dire threats of political reprisal at the polls. But time was running out and the decision at last was made that O'Neill and his heroes must be evacuated. A barge and tug were sent from Buffalo. The Fenian army, freeing its prisoners, often with a slap on the back and expressions of hearty esteem, was loaded aboard. No sooner were its members in midstream than the tug Harrison, of Captain Bry-

son's flotilla, hove alongside and escorted the barge and its load down stream to anchor under the guns of the *Michigan*. The United States authorities had arrested the lot.

This word did not reach Colonel Peacocke at New Germany, although rumor of the loading of the reinforcements did. thus renewing his caution. It was not until about 1600 that his scouts returned with positive information that the victorious Fenians had given up the pursuit of Colonel Booker's routed force and were headed toward Fort Erie. He at once gave orders to follow. It was about this time that he was reinforced by a troop of approximately 50 cavalrymen, the Governor General's Bodyguard, commanded by Major George Denison, Colonel Peacocke described to Major Denison the route he meant to follow to Fort Erie, the Lower Ferry Road, and dispatched the cavalry as a scouting screen ahead.

About nine miles from New Germany, and a mile beyond the crossing of the Lower Ferry Road and the Ridge Road. Major Denison and his troop came to a position where the woods closed in on the road for a stretch of about a quarter of a mile. Twilight was coming on. The cavalry observed men flitting in and out of the woods and Major Denison, recognizing the possibility of ambush, halted and sent word back to the colonel who quickly joined him. Two companies of infantry were ordered up to search the woods, but in the rapidly increasing darkness could make no headway through the thick brush. Colonel Peacocke wisely recalled them, brought his column into laager, and established a perimeter for the night. Based upon what knowledge he had at hand, it was the sensible thing

During the night he received two items of intelligence. One was that additional reinforcements had reached New Germany, nine miles in his rear, and that another

case

vadi

app

forn

ther

near

B

ica

cule

thre

cert

awo

atte

bly

Bri

Car

tion

ma

Isa

me

bro

Gla

ati

major force under command of Colonel R. W. Lowry, an officer senior to him, also was on its way to Fort Erie. The second was a telegram confirmation that Colonel O'Neill had been reinforced by 2,000 men. The truth, that the 2,000 men observed on barges had never crossed, and that Colonel O'Neill and his invaders were at the moment in arrest under the watchful eye of the United States Navy, did not reach him until about 0500 as he was getting his column underway, and then only in the form of a rumor, carried by a Lieutenant Colonel Cameron of the militia, that the Fenians had gone back across the river. By this time it seems reasonable that Colonel Peacocke would be wary of acting on rumors of an optimistic nature, and would so comport himself that his command would be prepared to meet the worst that could be possible. He moved forward with energy, but carefully, behind the cavalry screen to which he gave wide latitude for forward reconnaissance, provided only they maintained constant communication with him.

Major Denison, after receiving some erroneous information which, relayed to Colonel Peacocke, reinforced that gentleman's caution, was able quickly to establish, on reaching the river, that the Fenians, except for stragglers, had indeed gone. He confirmed this by visiting the USS Michigan and being assured that the bargeload of men anchored nearby was in fact the invading force. He moved on into Fort Erie with his cavalry, being on hand to meet Colonel Lowry's force, advancing down the River Road from Black Creek with equal caution, as it arrived shortly before Colonel Peacocke and his column marched in from the west. By 1000, 3 June, the Canadians had nearly 3.500 men concentrated in Fort Erie.

#### Conclusion

So ended the Fenian foray into Canada. But the fear of another in greater strength, and profiting from the knowledge gained of the unreadiness of Canadian military forces to meet such a challenge, kept the frontier, on the Canadian side, in a state of alarm for months.

But the United States Government took a firm position and later attempts at trouble at St. Albans, Vermont, and other places were stopped on the United States side by Army troops. Sweeny and O'Neill both were arrested as was also the ubiquitous Mr. Roberts. But their arrests were not followed by prosecution, probably because of fear of exacerbating the Irish vote. Indeed the Government was so anxious to avoid difficulties that it paid the fare of the men arrested fleeing from Canada back to their homes.

The reaction of many Americans, including responsible citizens by no means chargeable with pro-Irish sympathies, is perhaps best reflected in an entry in the diary of George Templeton Strong, a leading citizen and lawyer of New York City, a trustee of Columbia College, and a vestryman of Trinity Church, dated 4 June 1866:

The Fenian invasion of Canada was not wholly a farce. Real powder has been burned and real blood drawn. There was a scrimmage at Ridgeway. The Canuck volunteers seem to have been repulsed, but the telegrams are confused and contradictory. The invaders at any rate faced about immediately thereafter and made remarkably good time for the border. Some gained the American shore, some were bagged by a neutrality-preserving gunboat of ours, and some by the minions of Saxon tyranny. These last are in some danger of being hanged as I think they deserve to be. The fright and worry and expense that Fenianism is inflicting on our northern neighbors are a just retribution for their treatment of us during the war-for their harboring and petting the vilest conspirators, assassins, and poisoners of Secessia, for the St. Albans raid and the Coursol decision. A specially comforting feature of the case appears to have been that this invading army of outlaws and land pirates appears to have been officered by ruffians formerly in the Confederate service and therefore beloved of all Canadians two years ago.

By 1870 the Fenian movement in America died an abashed death, killed by ridicule and the obvious disparity between its threats and its performance. But it had certain effects on history. For one, it awoke the British Government to renewed attention to Canadian aspirations, sensibly accelerating the passage in 1867 of the British North America Act upon which Canada's present-day constitution rests. For another, although the immediate reaction in Ireland was further repression and many treason trials, the agitation of Isaac Butt, the Tory Member of Parliament for Trinity College for Home Rule. brought the British Prime Minister, Mr. Gladstone, to legislative measures alleviating, in some degree, the causes of sharp

discontent of the Irish peasantry. And for a third, the lesson of what might have happened in Canada had the American Government maintained the same notion of neutrality that Her Majesty's Government had shown during the Civil War, had its effect in the sweeping concessions made by Britain when the claims for damage by the British-built Confederate commerce raiders were settled in General Grant's administration.

And so the dream ended, in mortification on one side, and in laughter elsewhere. But ended, it did not die. Smoldering over the years it broke out again in the Easter Rebellion of 1916, and reached partial success in the Anglo-Irish Treaty of 1922, which established the foundation of the present thriving and independent Republic of Eire. But we see today that it is not, and was not, an Irish dream only, but the inner possession of men everywhere which needs only to be compounded with the willingness to die to raise a power among the nations.

We must impress each man in our Army with the traditions and importance of the specific unit in which he is serving. He must feel the link with the past, the ties with the present, and the need for progress in the future. Only then will he realize that in the Army, and in particular in his own outfit, will he find the satisfaction of serving in company with respected associates helping to preserve glorious historical traditions and at the same time sharing in the development of modern, progressive ideas.

Lieutenant General Walter L. Weible

# **LOGIC IN LOGISTICS**

Lieutenant Colonel Richard C. Biggs, TC Faculty, U. S. Army Command and General Staff College

# KEEP ARMS PLANT OPERATING BY HELICOPTER DELIVERIES

The McCullough Company on West Street is assembling electronic equipment for the Army on its regular schedule today in spite of yesterday's storm which stopped truck and rail deliveries throughout the area. A helicopter was used to bring parts and subassemblies 40 miles from Ashton to keep production lines operating.

A. J. Crosley, plant manager, stated that for the last two years production had been maintained on schedule in spite of a minimum inventory of components on hand at the factory. All items needed have been delivered on a schedule geared to their use on the production line. When truck and rail shipments of parts for today's operations failed to arrive because of bridge washouts east of town, it looked like a costly shutdown of the plant due to lack of parts. However, Mr. Crosley found that the needed parts were in a warehouse in Ashton, and that Ed Stankey who runs the Stankey Crop Dusting Service had a helicopter available. It was a simple matter to arrange for pickup of the parts at the warehouse in Ashton and their delivcry direct to the McCullough Company plant. The helicopter made four trips and moved 5,000 pounds of parts.

Mr. Crosley stated this afternoon that if the helicopter had not been used, the company would have had considerable difficulty in meeting the completion date of one of the plant's Government contracts.

wai

tive

tar me

Th

sin

ve

pr

From the Glendale (Indiana) Times 1

The McCullough Company's emergency supply operation is a civilian industry counterpart of the Army's Modern Army Supply System (MASS).2 The primary difference is that MASS is a planned system of integrating transportation and supply operations to substitute dependable delivery of supplies for large stocks on hand to support forces in the field. The system was inspired partially by civilian industry systems and has been made feasible to a degree by the development of electronic data processing and transmission capabilities. It is an example of the Army's adoption of techniques and technology developed by civilian industry.

In like manner, civilian industry has adopted techniques developed by the military. This mutual exchange process will continue to the benefit of industry and the military, but often with primary benefit to the military. Why is this probable? Principally because civilian industries must make immediate application of even

An effective logistical support system is a requisite for successful combat operations. The responsibility for development of this system is not confined to the logistician but is the job of the tactician as well

<sup>&</sup>lt;sup>1</sup> This is not a factual newspaper account, but a hypothetical illustrative situation.

<sup>2&</sup>quot;Project MASS—A Modern Army Supply System." Lieutenant Colonel J. C. Coleman, Jr., Military Review, July 1956, p 25.

minor improvements in techniques, hardware, and procedures if they are to stay in business under the American competitive system.

On occasion, it appears that the military waits for an entire series of improvements leading to a wholesale revision of a system before taking action to change. There are notable and laudable exceptions to this, and MASS is a good example, since it is organized to use presently available equipment and to integrate new developments as they become available. Other elements of our logistical support system periodically are incorporating some new procedures and equipment.

#### Can Present System Do Its Job?

In spite of these steps there is a strong body of opinion which holds that the present theater logistical machinery cannot adequately support tactical operations as they are envisioned presently. The proponents of this view normally are not specific as to why the system will not work, but the idea is accepted.

What is the answer of the harassed logistician to accusations of his inability to provide support? Generally, he opens his "world of tomorrow" book and talks glibly of 100 percent air lines of communication, 50-ton triphibious cargo carriers, logistical missiles, conveyor belts from the Continental United States to the frontline, automatic data processing systems which telepathically read the mind of each man in a foxhole, and similar hardware which

Lieutenant Colonel Richard C. Biggs was graduated from the University of California in 1939. He served in the Southwest Pacific during World War II with the 24th Infantry Division, and with the US Military Government Command in Korea from 1946 to 1948. He was transferred to the Transportation Corps in 1947 and subsequently commanded a small port and a truck battalion in Korea during 1952-54. Upon completion of the Regular Course of the U. S. Army Command and General Staff College in 1955, he was assigned to the faculty.

will enable him to provide any type support required. Thus he can counter all jibes from his tactical counterpart who also is using drawing board equipment and weapons.

Let's get down to earth! What can we do now to support present tactical capabilities, and how can we improve that support? When that is determined we have a standard from which we can forecast our ability to meet future tactical capabilities. The United States is the most highly industrialized Nation in the world, possessed of unlimited ingenuity, and sufficient resources for new hardware. How can those assets best be employed?

#### Requirements Versus Capability

First, the type of tactical operations to be supported must be determined. Generally speaking, it appears that the force structure will be smaller in a given area than in past wars. Some units will be operating well-dispersed from other forces; fixed "no man's lands" will be nonexistent: secure lines of communication will be the exception; and facilities such as beaches and rail lines will be subject to mass destruction. Movement by air will be restricted severely, except over friendly territory which is controlled sufficiently to prevent enemy employment of surfaceto-air weapons, and over which we have control of the air. Obviously, this is a difficult setting in which to provide logistical support with any system, but our current tactical units can operate in this type environment.

What type system do we presently have to provide support? Basically, it is a refinement of the etappen, or staged system developed by the Prussians and first used against Austria in 1866. In this system the tactical forces, as they advance, are supported by a lengthening chain of supply and service facilities, linking themselves with the homeland or base of operations. In the extreme, this chain of sup-

again

cian

plies

with

simp

to ha

dolla

omy

of co

velor

squa

as w

ploit

lowin

-Co

out c

dling

main

and

techi

for i

profi

try.

hund

with

Mobi

maxi

knov

quen

have

centl cific

gisti

expe

indu

-su

milit

deve

in in

the :

line

in 19

This

at th

ress

simp

2.

1.

port gradually is expanded and duplicated until it becomes a network of arteries feeding support to the fighting forces.

Current logistical support concepts provide for some modifications of the system, but not in the basic design. It is dependent on a ground line of communications for movement of the bulk of supplies, and a rather high degree of security over a large area in which support installations and transportation facilities can be dispersed.

Our present technology and resources do not permit departure from the staged system unless there is a major breakthrough in transportation which will permit us to move supplies safely from a base of operations to distant fighting forces through, over, or around uncontrolled territory. The most logical step in this direction is an air line of communications. The next most logical is a comparatively impregnable amphibious type land vehicle which can be moved in quantity through a "corridor" from the base of operations to the fighting forces. Both these means are beyond our current resources. However, air movement of some support and use of "corridors" for overland movement are within our present capabilities.

It is not only the logistician's job to improve the system. Putting logic in logistics is everyone's business.

As a first step the tacticians must be furnished definite security requirements for line of communication activities furnishing them logistical support. These must be valid requirements based on minimum standards and with full recognition of logistical forces' capability to provide their own security. These requirements may affect the degree of mobility and dispersion that can be employed in tactical operations, for as General Eisenhower has stated "It is logistics which controls all campaigns, and limits many." While these requirements will vary materially based on the type of war and geographical environment, a definite set of standards can be established. For example, in an atomic war on a large land mass, the logistician might say:

I must have a coastal area with adequate air and ground security to operate one small port or beach for each division supported. From that coastal area I must have two corridors leading to the combat forces through which I can move supplies by pipeline, truck, and rail. In addition, I must have one corridor through which I can move guarded convoys of trucks on an emergency basis. I must have air corridors through which I can move 15 percent of your supply requirements other than petroleum, oil and lubricants, and ammunition. In my advance area, directly supporting your operations, I must provide security to air and ground terminals, storage and maintenance installations, and hospitals. If you will provide me the forces to maintain this amount of security, I can support your operation.

Assuming the tactician agrees to these requirements and furnishes the required resources, he then is free to conduct tactical operations any way he desires. He must be aware continuously of the security requirements of his line of communications, but has considerable leeway in the degree of dispersion and mobility for his tactical operations. He should be able to operate with good assurance that support will be furnished when and where he desires it. He should look to the logistical support commander for support in the same manner that he looks to an adjacent unit for his flank security, that is, with confidence that it will be rendered, but without complete oblivion to his own responsibilities.

#### The Logistician's Job

The logistician must accept his responsibility and do his utmost to provide dependable support with the greatest possible economy of men and materials. Here,

again, he has requirements for the tactician who is the principal user of the supplies and services, and economy must start with the user. Economy in this case is not simply "supply economy" which has come to have the unfortunate connotation of a dollar price stenciled on each item. Economy encompasses all aspects of support of combat forces, from research and development to use of supplies by a rifle squad. Knowledge from civilian industry as well as within the Army must be exploited to provide improvement in the following areas:

1. Technology in logistical operations. -Containerization (make big packages out of small ones), mechanization in handling matériel, elimination of unnecessary maintenance, improved storage practices, and expedited and simplified requisitioning techniques are areas with great potential for improvement. Here, the military can profit by the experience of civilian industry. For example, although there are hundreds of officers training each year with civilian industry under the Industrial Mobilization Training Program, too often maximum advantage is not taken of the knowledge they have gained. It is frequently pure chance that these officers have the opportunity to apply their recently acquired knowledge to making specific immediate improvements in the logistical system. In addition, previous experience of military personnel in civilian industry, contacts with civilian industry -such as their training programs open to military personnel-and the research and development and procurement personnel in industrial plants must be exploited.

2. Reduction of the number of items in the supply system.—The total number of line items has been reduced from 1,500,000 in 1954 to approximately 950,000 in 1957. This problem has been attacked principally at the higher echelons to date, and progress is encouraging. However, it is not simply a cataloging problem. The consoli-

dation of 10 different descriptions of the same ball peen hammer—procured, stored, and issued by 10 different agencies—into one Federal Supply Catalog description is an important and long overdue step. However, further steps can be taken. It is entirely possible that a 20-ounce and 24-ounce ball peen hammer can be used interchangeably, but this fact must be accepted by the user. If he is adamant in his demand for a specific item, however, the supplier must furnish it.

Each separate item requires men, money, and materials to procure, account for, store, transport, and issue. A second item requires measurably more effort to handle than an increased quantity of one item. Reducing items in the system must start with TOE units. Strict and thorough analvsis must be made to delete items not essential to the mission, or for which another item is an acceptable substitute. Why have a two-hole and a three-hole paper punch in a unit when the three-hole punch can do both jobs? Minor, but when multiplied by the number of similar examples and the number of units involved it can amount to tons of supplies and innumerable people to handle them.

3. Standardization.—This is a subelement of the problem of reducing the number of items in the supply system, but merits special attention. Major steps to date include the Federal Cataloging Program, which provides for a single identification for every item in the Federal supply system, and various agreements with other countries and treaty organizations for matériel and nonmatériel (procedures) standardization. A principal bottleneck to standardization is in the user's statement of military characteristics for a development item. Accustomed to the ultimate in capabilities of items used in our daily lives, we will not accept less than optimum performance for each element of a given piece of equipment. For example, a single type of electric motor may fit the bill for several

tho

sta

plo

or :

1

2

Ι

of t

tact

org

goin

for

our

the

stat

0

the

for

eas

stat

Thi

inte

G2,

cer,

Mo

por

tior

mai

De an ur

1

I

existing pieces of equipment and will do an acceptable but not outstanding job in a new item. Will we use that motor in the new item? Not if we can help it. What is the result? Another item and its repair parts in the supply system and a proportionately smaller chance that it will be available for replacement during combat. A degree of standardization must be accomplished if a supply system of manageable proportions is to be produced. The tactical commander in some cases will have to accept a lesser but still acceptable degree of appearance or performance when the gain in standardization merits.

4. Reduction of size and weight of items in the system.—This is a major problem and has significance beyond the field of air transportability. During World War II it was standard that most items were handled physically at least 14 times within a theater before reaching the user. Every ounce thus becomes almost a pound from the viewpoint of its handling in the supply system. Therefore, every ounce that can be eliminated not only benefits the user by giving him lighter equipment, but greatly reduces the resupply problem from the viewpoint of transportation and labor. This area again is one in which the user must accept items which can do the job without "nice to have" refinements. The user must be aggressive in suggesting ways to reduce size and weight of items without such a degree of refinement as to increase the number of specialized parts too greatly.

5. Improved procedures.—This area is of primary concern to the logistician, but again acceptance by the tactician and suggestions from all echelons are of paramount importance. For example, one-line requisitioning procedures, use of punched card and data processing systems, and eliminating editing of supply requests at

every echelon are forward steps in requisitioning procedures. Changing maintenance policies are stressing the use of major item replacement, unit replacement of subassemblies, and use of "throwaway" items. The tactical commander must not attempt to burden himself with extensive maintenance equipment and personnel on the assumption that such a system might not always work and detailed organic maintenance will be needed. The system will work if properly managed.

Changes in the internal organization of units to accomplish logistical support are being studied and should be implemented gradually. Organizational changes as such are no panacea for inadequate support. However, our logistical support organization must be reorganized as necessary to inculcate the philosophy of the logistical agency's responsibility for providing support. The logistical agency must be given the resources and responsibility for providing support, be informed of support requirements, and then left to do the job.

#### Conclusion

Improvements must be integrated continuously without awaiting major breakthroughs or complete system revision. The principal concepts of logistical operations must come, as in the past, from the military knowledge and experience within the Army. The logistician as a member of the fighting team must be realistic, practical, and keep his eyes on the future, but his feet on the ground. The tactician must listen to his advice—give him the tools to do his job—and then insist that it be done.

Working together in practice as well as in theory the tactician-logistician team will provide for a more effectively managed military service in peace and a combat force highly capable of conducting warfare under future battlefield conditions.

# **USE ALL THE STAFF**

Major Lucian K. Truscott III, Infantry
Faculty, USA Intelligence, Military Police, and
Special Weapons School, Europe

THERE are two apparent schools of thought concerning proper tactical unit staff procedures for the planning and employment of nuclear weapons:

958

eqteof ent y"

ot

on tht

nie

em

of

are

ted

ich

rt.

za-

to

cal

up-

ven

ro-

ort

ob.

on-

ak-

The

ons

ili-

the

the

cal,

his

ust

s to

ne.

as

am

an-

om-

ing ons. 1. Assign the responsibility to the G3 or artillery officer.

2. Follow normal staff procedures.

During this period of transition neither of these systems is entirely adequate. Our tactics are in a state of evolution, and the organization of our fighting units is undergoing significant change.

Is it possible that we have seen the need for change in these two basic elements of our military structure and yet failed to see the necessity for revamping some of our staff procedures and organization?

#### **Current Shortcomings**

Consider some of the shortcomings of the two current systems:

"Letting George do it," letting the G3, for example, run the show certainly is the easy way out. But can one man or one staff section do the job? Not properly. Think of how many staff officers have an interest in atomic weapons: directly, the G2, G3, G4, artillery officer, chemical officer, engineer officer, and ordnance officer. More indirectly, perhaps, the G1, transportation officer, and, at times, the aviation officer, medical officer, and provost marshal—practically the entire staff.

The worst result of this complete cen-

tralization of control under one staff section is the effect it has on other staff sections—an eventual loss of interest, even indifference. For no matter how hard he may try to avoid it, the G3 (since we are using him as an example) or his assistants eventually fail to coordinate completely with other staff sections. This weapon, relatively speaking, is new. As a humorist once mentioned, "This thing is dynamite!" Naturally, every staff officer has his own ideas about how it should be used; everyone thinks he has the solution. Most important, since everyone is interested, we should act now while this interest is high.

Current tables of organization provide sufficient personnel to effect these special procedures and organization. However, a regrouping, both mentally and physically, is required. We must reorient our thinking out of the past or even the present. We need to place a greater number of our staff officers into the thinking future.

#### **Fundamentals**

Before any physical alteration possibly can be successful, we must be prepared mentally to accept it. A willingness to accept change can be achieved by recognition of three fundamentals of this changing age:

#### Time

The first fundamental deals with time—time to think, to plan, and to act. Al-

Development of nuclear weapons has created changes in both tactics and organization. Corresponding reorganization of staff procedures urgently is required now if we are to keep pace with this changing age

for

wit

tec

era

of

tiv

G3

en

sta

tui

011

tio

cer

at

of

for

nic

mi

tio

the

po

the

Th

th

pie

qu

W

th

ter

re

th

tic

pa

ge

ca

til

though we have this time in minutes. hours, and days, we are not organized to take full advantage of it. The G3 (again, for example) cannot possibly consider all the technical, tactical, and administrative aspects connected with nuclear weapons, particularly when he actually works with them only during those relatively isolated occasions when preparing for or participating in command post exercises (CPX's) or field exercises. It is an unfortunate fact that the average staff officer has time for little more than his day-to-day problems (usually of the "crash" variety) which can easily take up more than the normal work day allotted to him for solution. Experience and intelligence are not being exploited fully today because capable men are concerned with essential, but in some cases not mentally challenging, activities.

#### Guidance

Second, we must have guidance—guidance from senior officers; guidance which has its foundation in an intense, professional interest in the problem. Officers of this group must teach themselves, formally or informally, so that they will have a good working knowledge of the weapon effects and of damage estimation methods. They should not fear the weapon with a fear based on not knowing what it can do. This is a fear which prompts the feeling, "Well, if I ignore it, maybe it will go

Major Lucian K. Truscott, III, is a graduate of the 1945 class of the United States Military Academy; the 1953 Advanced Course of The Infantry School; and the 1955 Regular Course of the U. S. Army Command and General Staff College. He served in Korea as aide-de-camp to the assistant division commander, 2d Division, and as rifle company commander with the 9th Infantry during 1950-51. Other assignments include a year with the 188th Airborne Infantry Regiment; duty with the G3 Section, VII Corps in Europe; and as instructor with the Special Weapons Branch of the USA Intelligence, Militurope.

away." Senior officers must have enough technical background to realize why these weapons are having such an impact on our unit organization and tactics—why they are causing these changes. They must have the background to be able to give proper guidance to their subordinates. They must never be guilty of statements such as this: "We don't need to perform all of your fancy analysis on that target, let's just shoot a 20-KT at it." That attitude displays a type of thinking which can cause our profession immeasurable harm.

#### Confidence

The third fundamental is that of confidence-confidence in ourselves, in the weapons, and especially in the ability of our subordinates. The 40- or 45-year-old colonel, for example, must realize that the bright young captain or major working for him may be 35 to 38 years old (not exactly young), may have been through his branch advanced course, the U.S. Army Command and General Staff College, and, perhaps, the Armed Forces Staff College; may have participated in at least one war, possibly two; and may have served in staff assignments from battalion through corps headquarters. This subordinate staff officer can possess a wealth of experience, maturity, and intelligence.

#### Solution

The problem then is apparent: one man cannot do the job alone, and present staff organization and procedures are not wholly adequate.

What we need, in effect, is a group of organized atomic age thinkers at all echelons, down to at least division level.

Here is a solution to the problem as discussed by a commanding general with his chief of staff:

"The first thing I'm going to do is to assign a senior officer of the staff as the deputy for atomics. His title undoubtedly will be shortened to DFA, so we'll make it official now. He will be responsible to me

for the coordination of all atomic matters within the headquarters. This will include technical, tactical, and administrative operations.

58

ch

se

ır

ey

st

ve

s.

ts

i-

an

m.

n-

he

of

ld

he

ng

ot

is

ny

ıd,

e;

ar,

aff

ce,

an

aff

lly

of

he-

as

ith

to

the

dly

it

me

"Now, initially, we'll give him a group of seven officers as assistants, representatives of the following staff sections: G2, G3, G4, artillery headquarters, chemical, engineer, and ordnance sections. Other staff sections will be brought into the picture on an 'on-call' basis, and if it turns out that we need continuous representation from, say, the transportation section, we'll pull a man in. I want all of these men to be qualified special weapons officers, not necessarily target analysts, but at least qualified in their particular field of interest. The ordnance representative, for instance, must have a detailed technical knowledge of all the weapons we might be required to employ, and, in addition, must be thoroughly familiar with all the operations of the special weapons support battalion.

"Leave all of these officers assigned to their respective staff sections, but move them into one office, along with the DFA. They'll work together in garrison, and they'll work together in the field.

#### Method of Operation

"Now, their method of operation: every piece of paper that comes into the headquarters that has anything to do with atomics—practically anything that has the word atomic in it-will be routed automatically to the DFA. In addition, anything about new organization, tactics, technology, or anything else which is the result of the impact of these weapons on the Army, will be passed to him for action. This next point may seem a bit of a paradox, but I don't want this group to get bogged down with a lot of details that can be handled by their respective staff sections. They will not, for example, become involved with the scheduling of artillery battalion tests and the necessary coordination with the ordnance support battalion for the special weapons portion; the staff sections concerned can handle that. This group will, however, become very much involved with the reasons, to continue the same example, for the failure of a field artillery battalion to pass the special weapons portion of its test. And it will forward to me its considered opinion of the reasons for the failure and corrective action that should be taken.

"I don't want the general staff officers, any of the section chiefs, cut out of the picture. We won't prevent any of them from expressing an opinion on anything that concerns them. For example, any paper which requires G4 comment or action will be handled by his DFA representative; but that officer will coordinate all action with his chief. As a matter of fact, after this system has been working a while, I think the section chiefs will be able to give their DFA representatives some rather broad, general guidance that will cover most situations.

"Just to ensure that everyone is kept informed of what this DFA is doing with all these people, I'll want him to brief all section chiefs weekly on his operations and his plans.

#### Duties in the Field

"The DFA will handle day-to-day atomic activities, but he also will assist the G3 and artillery officer in the preparation of the atomic appendices to operation orders for CPX's and field exercises. When the headquarters moves to the field, I tentatively plan on doing away with the DFA as a staff position. Out of garrison I want him to operate as a general observer, troubleshooter, or what have you. I won't want him to do much talking, but I'll want him to do a lot of writing, mainly note taking on mistakes. His group, however, will remain intact, and they will continue to work together either as a part of the fire support coordination center or directly under the G3. We'll iron out the

art

"U

Co

wr

Me

Co

19

In

ant

ing

De

Arm tain and quar dure

with

tech

erat

type

the

beer

lons type

init

stre

nigi

and

lish

ins the

T

details of that later. Of course, it may turn out that we can better employ the DFA in charge of his group out in the field. Right now, though, I feel that his most profitable employment will be in garrison.

"Now, Chief, get this; and I want this complied with implicitly by all seven sections concerned. I want the best minds in this headquarters assigned to this group. I want experience, intelligence, and maturity, regardless of rank, branch of service, or age. And I want it because this is going to be a group of thinkers.

"These people must have time to think and to study, time to come up with some original thoughts. These people must read continuously, read everything they can get their hands on that has been written about these weapons: technical material, tactical material, new organizations, everything. They'll study reports from other units, higher, lower, and adjacent. They'll visit other units to see how they are thinking, planning, and operating. I want ideas.

If they come up with 100 new ideas a week, and only two of them have any value, at least we'll have two ideas that we don't have now.

"Last, your comment the other day, your fear, I should say, about a staff within a staff. Maybe that's what we're creating, or at least another staff section, eh?

"Well, Chief, maybe we are. Any more so than the planning staffs of some headquarters in World War II, though? I figure that if we can keep the headquarters from galloping off in about 10 different directions on atomic matters, we'll have about 50 percent of the battle won. And if we can create new ideas, test them, and send them forward as proved quantities rather than unknown-we'll have the other 50 percent won, and I'll begin to feel that we're contributing our part to the new age. I'm willing to gamble with our organization, at least until we get our foot well into the door of this atomic age, in order to prove that the tactical unit headquarters can think as well as act."

The mission of the Army is to conduct prompt, sustained, and successful combat operations on land, to defeat enemy forces, to seize and hold ground, and to dominate an enemy and his means of making war. There is nothing which has occurred so far which has made the accomplishment of this mission any less important. A strong and efficient Army, able to fight any foe, any time, any place, and on any terms, is as essential to our national safety today as it has been throughout our history.

The imposing array of responsibilities which rest upon our Army today are matched by its impressive accomplishments in the development and employment of powerful new weapons, streamlined organization, and atomic battlefield tactics. In every area—weapons, equipment, training, organization, and tactical doctrine—the Army is developing maximum power and flexibility to ensure that it will be able to get its troops where they are needed, when they are needed, and with the firepower punch needed for victory.

Secretary of the Army Wilber M. Brucker

# **KEEPING PACE WITH THE FUTURE--**

# Molding the Staff

Colonel Walter M. Vann, Artillery
Faculty, U. S. Army Command and General Staff College

This is the seventh in a series of articles expanding various aspects of "USA Command and General Staff College Keeps Pace With the Future," written by Major General Lionel C. McGarr, USA, Commandant of the College, and published in the April 1957 issue of the MILITARY REVIEW.—Editor.

#### The Situation

In an April 1957 memorandum, Lieutenant General Bruce C. Clarke, Commanding Seventh United States Army, wrote:

Despite continued improvements in our Army during the past decade, we still retain a tremendous amount of 'Command and staff inertia' in our higher headquarters. Our Command and staff procedures and techniques have not kept step with our new concepts in the tactics and techniques of combat formations and operations which are envisioned in our new type of divisional organizations. Just as the span of tactical control of units has been spread and commanders of all echelons are expected to work more on mission type orders and directives exercising more initiative and resourcefulness, so must we streamline the 'coordinating' setup, techniques and procedures of our command and staff echelons.

The Pentomic Army organizations established in 1957 capitalized on revolutionary

changes and improvements in military hardware. Integrated in these organizations are new types of missiles and nuclear weapons to increase greatly our firepower, and improved helicopters and armored carriers to add significantly to our air and ground mobility to and within the battle area. Our mobility and firepower are increasing by the day at an accelerating rate. Also earth satellites with their military possibilities have entered the picture. There appears to be no foreseeable limit to the military advances which the future may hold in the fields of weapons and equipment.

These changes in warfare obviously increase and complicate the major problems of the commander, which center on how best to exploit our weapons and equipment potential to ensure success in battle and yet prevent an enemy with similar advanced means from shifting the weight of combat power in his favor. Progress has been made toward the solution of these problems in the areas of unit equipment. organization, and doctrine. New and improved equipment has been developed to help locate and maintain surveillance over the enemy to increase our ability to concentrate combat power and disperse rapidly, and to communicate with and control dispersed forces moving continuously. Streamlined, flexible organizations have been devised, able to regroup their com-

In modern war, greater capability—to destroy enemy units in an instant—is involved in decisions. To meet this situation a continuous and thorough analysis of United States Army staff structures is mandatory

tin

de

or

do

in

tr

pl

E

st

Wa

tiv

ponents and tailor their composition rapidly to cope with battlefield changes in a variety of operational environments. Doctrine effectively to employ resources available (and to become available) in the Pentomic Army has been developed and is constantly being improved.

All these changes together have had a profound effect on the requirements placed on a commander and his staff. In comparison with the past, much faster and more accurate coordination and control by a commander and the staff are needed. A greater volume of information must be handled in less time and a greater number of decisions must be made in less time. More complex situations must be analyzed and evaluated faster. And, finally, greater capability, to destroy enemy units in an instant, is involved in decisions accompanied by proportionately greater risk. To meet this situation a continuous and thorough analysis of United States Army staff structures is mandatory. This must be accompanied by immediate development of any required changes in staff doctrine, and by application of the revised doctrine in Army or-

Colonel Walter M. Vann was graduated from the United States Military Academy in 1939. He also completed the 13th General Staff Course of the U.S. Army Command and General Staff College in 1943; attended the Armed Forces Staff College, 1952; and the Army War College, 1955-56. During World War II he was with G4 Headquarters, 12th Army Group, in Europe. Other assignments include duty in G4 Plans of Headquarters, US Forces, European Theater and European Command; G4, Department of the Army; AAA Battalion Commander and G3 Executive at the Antiaircraft Artillery Guided Missile Center; G3 Plans of US Army, Europe; Assistant Deputy Chief of Staff for Operations, Headquarters, USAREUR; and Commander, 1st AAA Group, Seventh Army. The author of "Antiaircraft Defense," which appeared in the January 1958 issue of the MILITARY REVIEW, he was assigned to the USA CGSC in July 1956 and now is Director of the Department of Staff and Educational Subjects.

ganizations and in the service schools which prepare the Army's commanders and staff officers.

The magic numbers G1, G2, G3, and G4 were adopted from the AEF concept of general staff organization. They became enthroned in our doctrine and a theory developed that an identical system of staff numbering should prevail from the battalion through every echelon of command to include the War Department. This is a false theory for the War Department's tasks and problems are radically different from those of troop command, whether battalion or field army, and requires an entirely different staff organization.

-General Williston B. Palmer

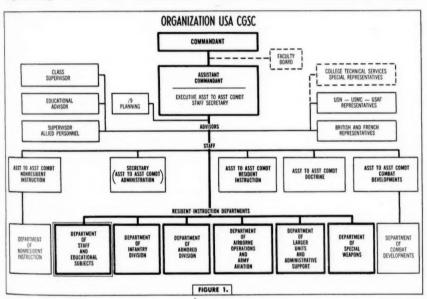
#### The Organization

The United States Army Command and General Staff College has been continuously and acutely aware of the situation portrayed above. With an instructional mission of preparing officers for duty as commanders and general staff officers at the levels of division, corps, and field army including their logistical systems, the communications zone, its subordinate elements, and the theater army personnel replacement system; the entire College has the daily responsibility of presenting in classrooms, staff organizations, procedures, and techniques designed for modern war. Every department and staff agency at USA CGSC is involved in ensuring that staff instruction is valid and adequate. When changes in the Army's organization and accompanying doctrine required, in 1957, a revision of the curriculum and supporting College organization,1 one of the major considerations was the development of the optimum organization and procedures for staff instruction and doctrine.

<sup>&</sup>lt;sup>1</sup> "Keeping Pace With the Future—Resident Instruction at USA CGSC," Colonel James L. Frink, Jr., Military Review, February 1958.

From consideration of all factors pertinent to the problem, certain criteria were derived to govern the curriculum plan and organization plan.<sup>2</sup> First, an integral plan to improve the total quality of the USA CGSC graduate and of US Army staff doctrine was needed. Modern doctrine and instruction had to present the staff in its true light as the tool of the commander, to assist him in the details of making and supervising tactical and administrative

of the 1957-58 rewrite and revision of the curriculum. This had to be accompanied by a modernization of training literature for which the College is responsible. Key considerations emerging from these requirements were thorough comprehensive coordination, simplification, and speed of staff reaction. In the revised curriculum the College continued the previous concept of balanced Phases of Instruction. These Phases of Instruction are: famil-



decisions. Throughout the College, adequate and proper emphasis had to be placed on each general staff section and activity in order to obtain correctly balanced modern doctrine and instruction. Efficiency in use of student learning time and instructor working time in developing doctrine and preparing and presenting instruction had to be achieved. Finally, it was necessary to accomplish these objectives concurrently in one year as a part

iarization; application; advanced application; and general education. For staff instruction, the familiarization phase, the initial part of the application phase, and the general education phase are the responsibility of the Department of Staff and Educational Subjects (DSE). See Figure 1.

Since the effectiveness of staff instruction is dependent upon an adequate and thoroughly modern doctrinal basis, the department is charged with responsibility

la

A

d

p

a

E

S

le

cl

v m a

fi

ir

a

B

CA

be

a

ta ba

a

SI

to

SI

al

W

ci

A

in

A

CO

a

for formulation and revision of doctrine and training literature pertaining to staff organization, procedures, and techniques. The levels of these responsibilities include division, corps, field army and their logistical systems, the communications zone, and the theater army replacement command. Also included are departmental responsibilities accruing from College responsibilities in the joint doctrinal field.

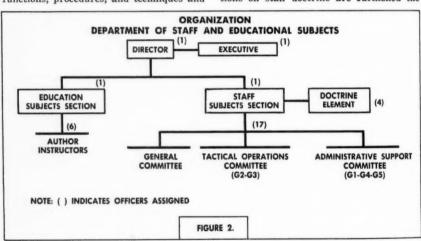
The College instructional mission requires that the graduate have a thorough grounding in current staff organization, functions, procedures, and techniques and

than partly training, in nature.

To carry out these primary responsibilities, the department, with an assigned strength of 31 officers, is organized into two sections, with strengths as shown (Figure 2). Staff doctrine is the responsibility of the Staff Section.

#### **Doctrinal Activities**

Within the Staff Section of the department is a Doctrinal Element composed of officers assigned full-time doctrinal duties (Figure 2). Concept guidance and instructions on staff doctrine are furnished the



that he be well-acquainted with future trends in this area. A sound educational background in subjects relevant to the military as a part of a broad intellectual capacity is of equal importance to enable him to reason logically and use sound judgment on modern battlefields (or in any other duty). The Department of Staff and Educational Subjects is responsible for preparing and presenting instruction in what are termed "educational subjects" which have the purpose of long-term development of values, standards, and knowledge of the professional officer. This instruction is entirely educational, rather

department through the Assistant to the Assistant Commandant for Doctrine (AACDOC).<sup>3</sup> Acting on specific instructions from the Department Director and the Chief of the Staff Section, the element prepares plans of study or project outlines which after review by the Department Director are forwarded through the staff to the Assistant Commandant or the Commandant for approval. Subsequently, the element prepares the doctrinal study or training literature concerned.

<sup>3 &</sup>quot;Keeping Pace With the Future—Development of Doctrine at USA CGSC," Colonels Victor W. Hobson and Oliver G. Kinney, Military Review, November 1957.

In addition to initiating action in compliance with College guidance to formulate or revise staff doctrine (including Army aspects of joint staffs at appropriate levels), the department reviews, evaluates, and coordinates the staff aspects of doctrine developed by other College departments and by other Army and joint agencies. The Department of Staff and Educational Subjects also prepares subsidiary studies on the staff aspects of selected doctrinal areas to develop an appropriate basis for the revision of training literature pertaining to staff doctrine. Current studies of this type cover such areas as the staff aspects of electronic warfare, chemical and biological warfare, unconventional warfare, fallout prediction and monitoring, rear area security, area damage control, mobility, combat deception, fire support coordination (FSCC and TAOC), combat surveillance, and systems for effective coordination of tactical and administrative support operations.

Illustrative of the procedure employed in formulating a subsidiary study is the area of fallout prediction and monitoring. By US CONARC direction, a conference was held at USA CGSC in November 1957 to obtain views of other service schools. US CONARC, and the Department of the Army. Thorough research had previously been accomplished by the College on all aspects of this doctrinal area which pertained to staff operations, including Combat Developments studies of the College and other agencies and services. The results of this conference were forwarded to US CONARC for approval. The specific staff responsibilities of the General Staff and appropriate special staff officers, as well as operating functions of staff agencies were carefully delineated. US CON-ARC then directed preparation of training literature which has now been drafted. After additional review and appropriate coordination within USA CGSC and with agencies in the field, a proposed draft training circular will be sent to US CON-ARC.

The Department of Staff and Educational Subjects, in addition to being responsible for the formulation of doctrine on staff organization, activities, techniques, and procedures, is also charged with assisting in monitoring staff instruction and doctrine developed by other resident departments of the College. This monitorship role encompasses close author-level coordination and advice during the writing of training literature: assisting in examination of other resident departments' planned curricula to ensure a proper balanced coverage of staff doctrine; and providing representatives for Departmental Doctrinal Reviews.

The organization of DSE with its functional committees and the use of "points of contact" (Figure 2) is designed to assist materially in effecting optimum control and supervision of staff instruction throughout the College, Revisions or modifications in staff doctrine are coordinated with all appropriate College agencies and forwarded through AACDOC to the Commandant for approval. Upon final higher level approval, they are immediately given to all College agencies concerned to provide the necessary guidance to authorinstructors. During the development of doctrine, coordination is effected both internally and externally to the College.

The department publishes a Staff Reference Book which both supports instruction and will facilitate regular revision of Field Manual 101-5, Staff Officers' Field Manual, Staff Organization and Procedure. This book interprets and enlarges upon current training literature to permit better instruction. Also, until staff field manual coverage is revised, it serves as an interim doctrinal basis for uniform staff instruction throughout the College. The book is reviewed carefully by all agencies of the College and published as early as possible in the annual rewrite cycle in

ti

7

order that other departments can use it in preparing instruction. Preparation of the Reference Book is coordinated within the department by the Doctrinal Element.

All the varied activities of modern and future war affect staff organization, activities, procedures, and techniques. The development and crystallization of forward-looking, sound military doctrine requires much research, study, and coordination. Thorough knowledge of Research and Development projects, projected military hardware and contemplated field tests, and continuous liaison with the Department of Combat Developments on future operational doctrine are mandatory.

As is obvious from the preceding discussion, the four officers in the Doctrinal Element cannot handle all the doctrinal work of the department, nor would it be advisable that the element have the necessary strength. Their primary purpose is to provide continuity, supervision, and inspirational guidance. The instructors who write and teach staff subjects live intimately with the examination and interpretation of doctrine. The formulation of doctrine and the teaching of modern staff instruction are in practice inseparably woven together in the Staff Section.

#### Coordination of Doctrine and Instruction

The specific staff instruction is given by DSE. This instruction is designed to provide a sound basis for advancement to applicatory instruction given by all other departments.

As has been pointed out in the concept of phases of staff instruction, a significant extension of student learning of staff organization and procedures is achieved through this applicatory instruction. Close coordination by these departments with the Department of Staff and Educational Subjects is required to ensure that procedures and organization are consistent in all instruction. The Department of Staff and Educational Subjects is responsible

for assisting the Assistant to the Assistant Commandant for Resident Instruction (AACRI) in monitoring the staff instruction of other departments, for advising other departments on staff doctrine, and for assisting other departments in preparing and integrating staff instruction within their subjects.

Staff supervision of DSE is maintained by the Assistant to the Assistant Commandant for Resident Instruction (AACRI). Routine coordination and supervision is accomplished through an AACRI liaison officer. In addition, AACRI supervises DSE with respect to staff instruction in that AACRI staff officers specialize in supervision of G1, G2, G3, G4, and G5 type instruction.

Each instructor in the Staff Section is a specialist in the selected staff area(s) in which he writes and presents subjects. He contributes suitable material in this area to the Staff Reference Book. He is designated as a "point of contact" on that staff area for anyone in the College who needs help in preparing instruction or doctrine. He assists other authors, both inside and outside the department, to prepare instructional subjects. For example, the author of the basic subject on Intelligence is a "point of contact." He will be contacted by all authors in the College on any questions about intelligence staff organization or procedure which arise from their subjects. He will suggest ways of constructing staff problems in tactical situations. He will inform an author if his planned instruction appears likely to duplicate or conflict with that planned by another author who has consulted with him. Thus the author-instructor in the Staff Section is the key man in coordinating staff doctrine and instruction Collegewide at the working level.

The entire instructor part of the Staff Section is organized into three committees (Figure 2). The Administrative Support Committee consists of the "points of contact" on G1, G4, and G5. The Tactical Operations Committee consists of the "points of contact" on G2 and G3. Each of these two committees has authors designated also as "points of contact" on the general staff aspects of important activities handled by other departments. The grouping of doctrine and instruction in these two committees leads to closer and easier coordination in the tactical area and in the administrative support area. It also simplifies coordination on problems in which both areas are involved. The General Committee consists of the "points of contact" on matters of staff theory, organization, procedure, and techniques common to all general staff sections.

ed

RI

r-

c-

ze

35

is

8)

s.

is

is

at

ho

or

th

·e-

le.

li-

be

on

r-

m

of

it-

nis

lu-

by

ith

he

at-

ge-

aff

ees

ort

on-

# Planning, Preparation, and Presentation of Instruction

The importance of thorough coordination of staff instruction throughout the College and the methods by which this coordination is accomplished have been mentioned. Intradepartmental coordination is equally essential. This coordination is achieved through the Curriculum Planning process 4 and a system of directives. outline plans, briefings, and rehearsals. The same process and system which ensure balanced, coordinated instruction Collegewide provide for balancing and coordinating instruction within the Department of Staff and Educational Subjects. This can be illustrated by the Curriculum Planning Cycle for /9 (1958-59) courses of instruction.

After the Commandant's /9 Curriculum Guidance and Decisions on the /9 Curriculum had set the basic policies and allocations of hours for the Staff and the Educational Subcourses for /9, and the College Guidelines had been issued by AACRI, the department submitted the proposed College Directives for each subject for /9. These directives were developed based on detailed analysis of the /8 subjects and

When all College Directives had been received and analyzed by AACRI, the Director, Department of Staff and Educational Subjects (like the other department directors), presented a briefing to the Faculty Board, the Commandant and Assistant Commandant, certain staff officers, and curriculum planners of other departments. The planned content of each subject covered by the department's /9 College Directives were discussed, analyzed, and evaluated. As a result of the presentations and discussions, adjustments in the department's plan were made and revised College Directives approved by the Commandant.

This work was completed by mid-March. Concurrently, and beginning in December, the /9 Staff Reference Book had been drafted and coordinated throughout the College. Thus by the end of March the department had firm directives for its /9 work and the new College staff doctrinal basis for /9 was ready for approval by the Commandant. All other departments had a definitive statement of planned /9 staff instruction by the Department of Staff and Educational Subjects, and would soon receive the proposed new detailed staff doctrinal basis for instruction.

The doctrinal basis used is approved Department of the Army and US CON-

the results observed in classrooms. By this time, about three-fourths of the department's /8 subjects had been taught to both Regular and Associate Courses. Student reaction was taken into account. Individual subject content and the over-all department plan were discussed with the AACRI liaison officer and checked by him against coverage to be given in the various staff areas by other departments. These College Directives specified the length, purpose, and scope of each subject, the locale, form of war to be portrayed, and the scale of use of atomics. Accompanying them was an analysis of the changes from the /8 subjects.

<sup>4</sup> Frink, op. cit.

ARC doctrine except in those areas where approved doctrine is not available. In these areas College doctrine developed within the authority granted by US CONARC is used and is clearly identified as such.

Preparation of department directives actually drafted by author-instructors began after completion of work on College Directives. After review and approval by the Department Chief, these directives are issued and spell out what is to be covered in each subject to implement the purpose and scope of each College Directive. They prescribe the strategic setting and outline the general problem situation and any necessary guidance for the author on key points (special situations) within it. They specify the staff organization, functions, procedures, and techniques to be covered in the subject. They list the methods of instruction to be used. Other subjects to be used as a basis are prescribed as coordination requirements; key doctrinal references are also prescribed. Background material listings, if important, may be added. The author then has a firm and specific mission assignment and instructions to permit him to prepare and coordinate the instructional material. His strategic setting and general scenario have already been coordinated with AACDOC.

The author then works out the how of his task. He researches all applicable reference material and considers the various possible methods of doing his assigned job. When he has finished his study and consultation with other interested instructors on doctrine and problem design, he translates his selected best course of action into an outline plan. This is a complete subject framework, including timing, sequence, detail of instructional areas to be covered and problem structure for each area, and further detail on methods of instruction. The outline plan is reviewed by his section chief and reviewed and approved by the Department Director. The AACRI liaison officer is kept informed and assists the department in any necessary coordination or in resolving any problems which may arise.

The final writing of the subject follows approval of the outline plan. When it has been completed and coordinated in detail by the author with all agencies involved outside the department, it is put through Department Review. The material has now been checked by the author with all appropriate doctrinal and instructional points of contact in the College, from whom he has probably received considerable advice. They have helped him to develop a sound and interesting unit related to and coordinated with their own doctrinal areas and departmental instruction plans.

The department review board consists of the director, section chief, author, and appropriate specialist instructors in the department. If appropriate, it includes representation from AACRI, AACDOC, and/or other departments.

After department review and approval, the issue material is printed and the lesson plan reproduced. At a suitable time before the scheduled presentation date, the last preparation stage begins—rehearsals. The author briefs all instructors who will teach the subject. They study and rehearse the subject, first individually, then as a team. Finally, there comes a department rehearsal in which performances are polished and any minor details coordinated, which is then followed by presentation to classes.

This cycle provides for initial centralized College control to establish interdepartmental curriculum balance and to make certain that the balance is maintained in all subject areas within department courses of study. Department control and major coordination action is maintained by the system of directives and outline plans. Detailed coordination is achieved by authors during the creative, hard work of writing. Results and per-

forman at rehe The and pro Depart jects, co and nig

primar thoroug the res and prozationa the Col plied, r

tion p ments. problem the In mental Subcoustaff s extens backgr

The title in and ge ified of The

staff c

ture w

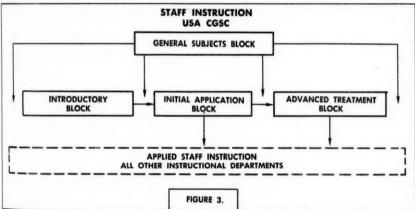
The

formance are checked first at review, then at rehearsals, and finally at presentation.

The Staff Subcourse of Study, prepared and presented by the Staff Section of the Department of Staff and Educational Subjects, composed of classroom instruction and night study for the /9 course has the primary purpose of giving the student a thorough and well-rounded foundation in the responsibilities, functions, techniques, and procedures of the staff at the organizational levels prescribed by the scope of the College mission. This knowledge is applied, refined, and increased in the instruc-

instruction in staff may possibly receive more curriculum time than specific instruction in command because training in staff is also a basis for the proper training of commanders. However, as there is always a tendency for the staff to be treated as an end in itself, the directed emphasis in the training of either commanders or staff officers is properly on the "Art of Command."

In these days, for all practical purposes, the difference between command and staff responsibilities and authority is only one of degree . . . the old idea of the staff offi-



tion provided by other resident departments. For example, as the student solves problems presented by the Department of the Infantry Division, he applies fundamentals and principles learned in the Staff Subcourse of Instruction. In addition, the staff subcourse provides the student an extensive and forward-looking professional background in staff activities and selected staff considerations most applicable in future warfare.

The mission of the USA CGSC, as its title implies, is to prepare commanders and general staff officers for duty at specified organizational levels.

The College does not neglect either of these elements of its mission. Over-all,

cer only as the advisor, the recommender, has faded away. The average staff officer, if he is doing his job, will make more decisions in a day than his commander will make in a week.

#### -General George C. Kenny

The Staff Subcourse is divided into four blocks of instruction. These are the General Subjects Block, the Introductory Block, the Initial Application Block, and the Advanced Treatment Block. See Figure 3.

The General Subjects Block consists of subjects which are basic in nature, designed to provide a foundation for the student in certain critical areas. Generally

of t

me

He

pol

act

pre

cle

thr

the

pli

sul

to

lea

un

stu

tie

an

A

su

na

an

sta

me

th

sta

tic

po

tie

th

tr

co

is

a

to

ac

or

er

st

cu

of

aj

ce

W

at

of

(

speaking, they do not relate directly to any one command or staff activity, but are necessary to all. Examples of units of instruction in this block are Effective Speaking, Effective Writing, The Role of the Army in National Security, and the Command and Staff Aspects of Army Management.

Effective Speaking and Effective Writing were introduced into the curriculum in response to the recognition of the vital need to improve the ability of future commanders and staff officers to communicate effectively. This critical aspect of professional development is strongly emphasized to ensure full student recognition of the importance of these key attributes, and to cause students to learn and apply important principles and techniques. Student application in these areas includes the presentation of both practice and graded speeches, and the research and preparation of a graded student treatise. In addition, stress is placed on the student's ability to communicate during his day-to-day acivities in the classroom.

"The Role of the Army in National Security" ensures an understanding of Army Philosophy and objectives by including essential coverage on the roles and missions of the Army and the National Military Program, their relationship to national security, and the strategic settings in which units of instruction are based.

In recognition of the increased importance of training leaders at levels appropriate to their responsibilities in the "peacetime" management of men and material, the educational subjects block of instruction was specifically designed to include suitable subjects of a management type. As an example, "Command and Staff Aspects of Army Management" gives the student an appreciation of the role of management in the Army and enables him to apply the principles of management. Further, staff instruction focuses to an increased extent an understanding of man-

agement principles applicable in both peace and war.

The Introductory Block of instruction gives the student a sound knowledge of the basic responsibilities, functions, techniques, and procedures of each general staff officer and the staff as a whole.

The end result of this block of instruction is a sound indoctrination in staff procedures particularly with respect to staff mechanics. The treatment of basic staff instruction in a single department has allowed indoctrination in procedures and techniques to be accomplished in an integrated, balanced series of subjects without unnecessary repetition. Every basic consideration of staff functioning (including employment of nuclear, chemical, and biological weapons) is covered. Indoctrination in procedures and techniques focuses on the staff as a vital and essential tool of the commander and emphasizes the learning and application of principlesthe "why." The "how" is appropriately emphasized in student work in this block of instruction as well as in the remainder of the course. Basic relationships and reasoning powers, and the ability to make sound decisions rapidly, are stressed.

From instruction in the sequence of command and staff action and common staff functions, the student progresses in the Introductory Block to the theory of the estimate of the situation. He is introduced to a common scenario which portrays an infantry division situation on an atomic battlefield. Following study and discussion of the responsibilities and techniques of each staff officer (without regard to a specific situation), the student prepares an appropriate staff estimate in the scenario situation. After he has absorbed the principles applicable to each staff officer and has made staff estimates, he completes the commander's estimate of the situation. He formulates his decisions, concept of operation, plans the tasks for the maneuver and fire support elements of the division (including nuclear delivery means), and prepares operation orders. He also estimates the administrative support situation, determines the supporting actions needed for an integrated plan, and prepares the administrative order. Nuclear weapons considerations are stressed throughout all staff instruction.

On completion of the Introductory Block, the student progresses to the Initial Application Block consisting of a series of subjects designed to require the student to apply in new situations the principles learned in the Introductory Block. These units of instruction broaden and refine student knowledge of staff responsibilities and procedures and develop reasoning and decision-making ability. The Initial Application Block contains two series of subjects. The first employs a common scenario and depicts an infantry division on an atomic battlefield. The student solves staff problems beginning with the movement of the division, progressing through the production and use of intelligence, staff estimates, the estimate of the situation, operational and administrative support planning, the preparation of operation orders and administrative orders, and the solution of operational and administrative support problems during the accomplishment of the mission. The scenario is set in the Fort Leavenworth area and a terrain reconnaissance is conducted prior to the formulation of tactical courses of action. The employment of nuclear weapons, both by the division and by the enemy, is realistically integrated into the staff functioning.

The student, having studied and discussed the responsibilities of each staff officer and the staff as a whole, and having applied the principles, techniques, and procedures in map exercises involving atomic warfare, is now ready to solve problems at division level which are presented by other resident departments.

The second series of the Initial Appli-

cation Block consists of subjects which give the student an understanding of the corps staff, the field army staff, and of the staffs in the communications zone. This instruction considers all essential staff aspects of the modern battlefield, and provides a staff basis for the solution to problems in units of instruction at corps, field army, and communications zone level which are presented by the Department of Larger Units and Administrative Support.

The Advanced Treatment Block of instruction is designed to broaden and enhance the student's knowledge of principles of staff organizations and functioning and to gain an appreciation of staff activities in future war and further refine the student's reasoning and decision-making ability.

For example, in the unit "Comparative Staff Systems" the student examines in depth the history, evolution, and current status of the staff systems of the major powers. In this unit the student also studies an analytical comparison of these staff systems. He also analyzes the requirements of the changing modern battlefield in the light of the need for staff improvements to meet these requirements. The staff principles learned in preceding blocks of instruction and practiced in the instruction of other departments of the College provide an excellent background for such analysis and comparison, and serve to impress on the student the relative validity of staff principles, as well as to reinforce the conclusions that organizations and procedures must be adapted to changing conditions.

Methods of instruction employed in the staff subcourse vary with and within each subject. The method of instruction is selected in each case which is considered to be most effective and contribute most to the student learning experience. During the Introductory Block, the method is predominantly the instructor-led conference and individual work with the students in

areas

subjec

of th

which

applie

Con

with

of m

by ar

Fren

section (50-75 man) groups, since it is necessary to ensure uniform and common understanding of basic principles in a comparatively short time. As the student progresses into initial application, small group work and discussions are used when appropriate. One subject may combine the informal lecture, the section conference led by the instructor, small group discussions led by student discussion leaders, and individual work requirements, depending on the nature of the subject matter and the learning vehicle which has been designed to present it. Regardless of the method of instruction used, however, the student makes his own decisions on problems. Emphasis is placed on the thorough application of the proper principles.

#### **Education Subcourse of Instruction**

The same postwar developments which have brought about the need for additional emphasis on staff theory and procedures have broadened the general areas of knowledge required by the Leavenworth graduate. To a much greater extent than in the past his assignments will be such as to require an appreciation of matters well outside the previously accepted professional scope of the Army officer. The rapid changes in technological development and the increased need for an understanding of interservice functions and international relations have produced a growing need for creative and developmental thinking. Such a background demands an academic investigation of appropriate subject areas to develop in the student an ability to think and reason objectively, as opposed to the learning of techniques. Because for many officers the U.S. Army Command and General Staff College is the peak of their formal military education, the College provides selected coverage to assist in preparing graduates to better meet the demands of these varied and important assignments. The Educational Block of subjects, consisting of Military Geography, Comparative Military Systems, The Legal Status of the Military, Military Organization and Management, Military Psychology and Leadership, and Military History serves these ends. While not new to the Leavenworth student, these subjects have been centralized in one department in order to provide selectivity in subject matter, continuity of instruction, and proper emphasis. These subjects also reinforce with sound theory the instruction presented in all other courses of study.

In order to give the study material maximum authenticity and authoritativeness, portions of the printed works of recognized authorities are used for reference and study. This also familiarizes the student with authors and sources which he may need in the future.

As a means of ensuring maximum effectiveness of the design and content of the Educational Block, the assistance of a number of agencies outside of the College has been enlisted. In addition to military authorities and the service schools, who were most helpful, civilian educators have also participated. Assistance has been received from Harvard, The University of Illinois, George Washington University, Massachusetts Institute of Technology, Northwestern University, The University of Oregon, Princeton, Michigan State, Colorado State. The University of Kansas, The Menninger Foundation, and the Association of American Geographers. These contributions have been in the nature of recommendations on subject design, suggested study material, and review of prepared units of instruction. In addition, it is partly from this group that guest speakers are obtained on educational subjects, whose presentations are integrated with the specific subjects.

Military Geography consists of an introduction to the field of geography, and its organization; a study of systematic geography from the military standpoint; and the relationship of land and water

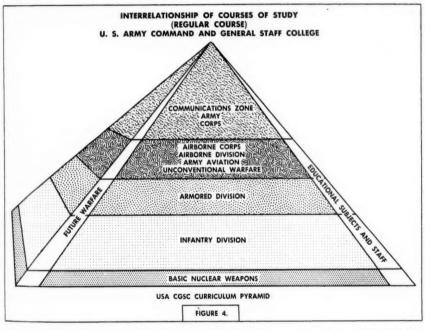
areas of the world to each other. The subject concludes with a regional analysis of the geography of selected areas, in which previously acquired knowledge is applied.

al

Comparative Military Systems starts with an examination of the characteristics of military systems in general, followed by an analysis of each of the US, British, French, and Russian military systems.

Military Organization and Management is presented as distinct from instruction in the Army Command Management System. It includes study and discussion of organization and management in the fields of business, government, and the military. The interrelationship of the principles and the contributions of one field to another are brought out.

Military Psychology and Leadership is



This subject concludes with a comparison of the readiness for and adaptability of the systems to the various forms of war.

Legal Status of the Military is devoted primarily to the problems of the Army role in civil emergencies and martial law. In the field of international law, however, there are discussions of collective security through international organization, status of forces agreements, civil affairs/military government, and the law of land warfare.

a study of aspects of the psychology of the soldier, viewed from the standpoint of the leader, during induction and early training and in combat. It includes the psychology of leadership at higher echelons, and concludes with an examination of the behavior of soldiers in a prisoner of war situation.

Military History introduces the student to the value of the study of military history and methods of studying it. The ap-

Wat

espec

have

equip

3,000

the 1

for

char

are

arou

basi

sust

mob

tem

125

tion

Uti

has

ity

ger

T3:

Ro

US

poi

an

ra

Th

plicatory phase consists of analysis of five historical military situations. The basic material for this study was prepared by the Office of the Chief of Military History, but the student, in each case, is given supplemental readings from diverse sources which require careful evaluation.

It is not by the nature of the instructional material alone that this part of the curriculum assists in preparing the student for his future role, but also by the method of presentation. The aims are to broaden the student's intellectual horizon, give him practice in reasoning and analysis, and provide him with such fundamental knowledge in each field as will afford him a base for further self-development. To this end, the method of presentation is based on maximum student study and thought coupled with informational presentations and lectures.

#### Summary

The present organization of the Department of Staff and Education by combining specific staff instruction in one department ensures a more consistant approach to staff instruction, provides an optimum basis for the development of staff doctrine, and has resulted in elimination of overlays and gaps. Similarly, combining educational subjects in one department provides increased efficiency and proper emphasis under centralized direction.

In Staff instruction, sound procedures, mechanics, and indoctrination are emphasized without sacrificing the other aspects of our staff mission such as reasoning ability and decision making. In introducing Staff the College gets students off at a relatively equal level of understanding without going into ele-

mentary detail or deliberately repeating branch school instruction. As Staff instruction develops, increasing emphasis is given to the administrative support elements of staff instruction, particularly logistics.

The Curriculum Pyramid Chart at Figure 4 depicts graphically the major courses of study conducted by the College and further reflects the present functional departmental organization. As shown by this figure the Department of Staff and Educational Subjects is not basically organized by type and level of responsibility as are other departments but rather is designed to cut across the entire spectrum of the College curriculum.

USA CGSC, because of its mission of preparing officers for command and general staff assignments at, and developing modern doctrine for, division, corps, and field army level and comparable levels in the theater administrative zone, directly influences the staff of every major command in the Army. The Commandant of the College pointed out the magnitude of the responsibility involved in this mission when he said: "The quality of performance of the College mission will affect the successful execution of the Nation's war plans, as they involve ground operations, more than will that of any other part of the Army Education System."

The Department of Staff and Educational Subjects is geared to the velocity of today's missiles and nuclear weapons and tomorrow's possible space war; instruction and doctrine are being formulated and presented which will enable staff officers of the modern battlefield to carry out their respective staff duties in a manner which has made the reputation of the Leavenworth graduate in the past.

Staff officers cannot be improvised; nor can they learn their duties in a few weeks or months, for their duties are as wide as they are important. I am decidedly of opinion that we cannot have a first-rate Army unless we have a first-rate staff, well-educated, constantly practiced at maneuvers, and with wide experience.

# MILLEARYENDIES

# AROUND THE WORLD

#### UNITED STATES

#### Water Purification Units

Three different water purification sets, especially adapted to field requirements, have been adopted as standard military equipment. Two of the units of 1,500- and 3,000-gallon-per-hour capacity are mobile, the third, also of 3,000-gallon capacity, is for base utilization. All units are interchangeable with respect to spare parts and are identical in operation. They are built around a cone-shape up-flow coagulation basin which removes mud, bacteria, and suspended matter from the water. The two mobile units are designed for operation at temperatures ranging from 40 below to 125 degrees above zero without modification.-News item.

**Utility Helicopter Accepted** 

The Army's XH-40 Iroquois helicopter has been ordered into production. The utility Iroquois, which can carry five passengers or stretcher cases, is powered by a T35 shaft turbine engine.—News item.

#### Roll-on Roll-off Vessel

The first roll-on roll-off vessel of the Military Sea Transportation Service, the USNS Comet, is designed specifically for point-to-point sealift of military wheeled and tracked vehicles. It has four side ramps and a stern ramp to allow vehicles

ranging from a jeep to a semitrailer truck to drive on and off the ship under their own power. The 499-foot vessel can carry a load of over 10,000 tons at a speed of 18 knots.—News item.

### **Armored Troop Carrier**

An additional contract of over 50 million dollars for continuing production of the M59 personnel carrier has been announced. The M59, which is both armored and amphibious, has a top speed of 32 miles an hour and an operating range of 120 miles. The 19-ton vehicle can cross a ditch 66 inches wide and can carry 12 fully equipped infantrymen. It also can double as a command post, a communications center, or provide logistical support.—News item.

# Electrical Combat Map

An electrical system has been designed and developed to provide a field commander with an accurate picture of the location and course of fixed-wing aircraft, helicopters, ground vehicles, and troops. The system is a modification of a low frequency area-coverage device originally built for control of air and marine traffic. It is said to be accurate to within 20 feet at all altitudes, behind hills and obstructions, and in all weather.—News item.

'Ha Hau 1957 the low tree diffic tion at r

> for und bea for

> > Th

tiv

is

al

lo

ve cia

P

de

ef

n



US Army Photograph

# The Army's lightweight mine detector and the older model it will replace (insert)

# Lightweight Mine Detector

A transistor mine detector has been developed which is said to be so simplified that operators can perform major repairs when necessary. The device, which weighs only seven pounds, is about one-quarter the weight of the standard model and has four times the battery life of previous mine detectors.-Official release.

#### Infrared Camera

The Army has a 100-inch infrared ground reconnaissance camera that is reported to be able to take a clear, sharp picture at ranges up to 30 miles through fog and overcast.-News item.

#### Missile Defense

Excellent progress has been reported on the development of two weapons to destroy enemy missiles. The two antimissiles are the Zeus and the Plato. Some of the components of the Zeus, designed to intercept and destroy long-range ballistic missiles, now are in being. The Plato system is under development for use "in the field, in defense of our field armies."

Electronic protective shields are under development for B-52 and B-58 bombers. The device is designed to operate against the guidance systems of attacking missiles according to a published report.-News item.

### 'Hawk' Radar

1958

The radar system in use to control the Hawk surface-to-air missile (MR, Sep 1957, p 64) is designed especially to permit the weapon to find targets at extremely low altitudes where buildings, hills, and trees make operation of a standard radar difficult. The guidance system ignores stationary objects, directing the weapon only at moving aerial targets.—News item.

### Marking Pylon

A new method of marking landing zones for troop-carrying assault helicopters is under evaluation. It utilizes standard beach-marking panels shaped to pylon form by field wire and a shelter half pole.



US Marine Corps Photograph
Marking pylon for assault helicopters
The nylon material presents a good reflective surface while the pylon configuration
is said to allow the panel to be seen from
all angles and at greater distances from
low-flying helicopters than does the conventional horizontal panel display.—Official release.

# Paper Sandbag

on

coy

are

m-

ept

es,

is

ld,

ler

rs.

ist

is-

A paper bag has been developed to replace the burlap sandbags previously used for revetments and flood control work. The new bag, made of knitted paper strands, does not ravel when punctured, resists the effects of blast, and has a service life in water comparable to that of the standard military jute sandbag.—News item.

#### Fastest Air-Breathina Missile

The X-7 ramjet missile has flown so fast in tests that its bright yellow paint was burned black by the heat of air friction. The X-7 vehicles are used to flight test powerful ramjet engines intended for use in defense weapons. Launched from a B-29 aircraft, the X-7 is driven by a rocket booster to a speed where the ramjet engine can take over. A pilot on the ground operates the high-speed aircraft by remote control. The X-7 is tracked by radar



Recoverable X-7 test vehicle

in tests; automatic radio transmitters in the aircraft send information back to ground receiving equipment. When the test is completed the X-7 is brought to a halt by a parachute and lowered to the ground where it lands on a nose spike.

One of the engines the X-7 has tested is the RJ43, the ramjet engine of the Bomarc surface-to-air missile. The RJ43 is 28 inches in diameter and 12 feet long. Although it weighs only 485 pounds it develops a maximum thrust of 11,500 pounds.—News item.

#### Inflatable Boat

The inflatable boat used by the United States Marines in amphibious operations and to transport troops across streams and water barriers is 21 feet six inches long when inflated, and weighs 418 pounds.



US Marine Corps Photograph
Marine amphibious reconnaissance team

When deflated it can be rolled and stored in its nylon carrying case which is only 86 inches long and 35 inches in diameter. The hull consists of 11 separate tubes of nylon fabric covered on all exposed surfaces with neoprene/nylon lamination. The boat can be inflated by mechanical or manual pumps or by carbon dioxide cylinders. Capable of carrying 15 men through high surf and rough water, the craft also is planned for use by reconnaissance teams.

—News item.

#### Interference-Proof Missile

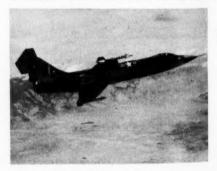
Utilizing a self-contained guidance system which is said to be interference-proof, a Mace tactical missile has flown successfully for an overland distance of 650 miles and has impacted in the selected target area. The Mace, a late version of the surface-to-surface Matador (MR, Oct 1957, p 61), was escorted in the flight by Sabre Jet fighters. Previous Matador missiles have been controlled in flight electronically by ground personnel.—News item.

#### **Gyroscope Ends**

The main features of the gyroscope plan of rotating entire divisions between the United States and Germany will be discontinued with the replacement of the 10th Infantry Division by the 3d Infantry Division. A new system which involves the exchange of battle groups and smaller units within infantry divisions will start late this year.—News item.

# 'Starfighter' Operational

It has been announced that the supersonic F-104A Starfighter interceptor is operational with units of the Air Defense Command at Hamilton Air Force Base, California. Special features of the Starfighter include a lightweight and highly accurate fire control system, the J79 turbojet engine which is said to be capable of propelling the aircraft to twice the speed of sound, and a downward pilot ejection system. In addition to its 20-mm, six-barrel Vulcan cannon the high-speed interceptor, which can climb as fast as it flies straight and level, is armed with Sidewinder guided



F-104A with Sidewinder missiles

missiles (MR, Jun 1957, p 67). The Star-fighter is said to be able to land in a runway distance no longer than that used by other operational jet combat aircraft. The two-seat version of this aircraft, the F-104B (MR, Apr 1957, p 64), is also in quantity production.—Official release.

'Sear Siz Sear unde

been more has

The The The in fl tail

> plan spec bat T

> > wou airc min sion tigh

mir tere

Yes

#### 'Seamaster' Tests

958

an

he

is-

th

Di-

he

ler

art

er-

is

nse

se,

arhly

ur-

of

eed

ion

rel

or.

ght

led

ar-

sed

ft.

the

in

Six evaluation models of the redesigned Seamaster P6M1 flying boat currently are undergoing flight tests. The models of the aircraft now being evaluated are powered by J-71 turbojet engines with afterburners. Another 18 of the aircraft which have been ordered will be equipped with the more powerful J-75. The new Seamaster has the engine nacelles canted outward to the rear to divert the heat of the engines' afterburners from the aircraft's fuselage. The tail surfaces also have been modified. The first two Seamaster aircraft were lost in flying accidents attributed to tail and tail actuating mechanism. The big sea-



US Navy Photograph
New version of the Seamaster

plane can carry a payload of 15 tons at a speed of 600 miles an hour. It has a combat range of 1,500 miles.

The Navy is considering the conversion of an escort carrier for use as a tender for the jet seaplanes. The conversion would provide a mobile base for the big aircraft which are capable of high-speed minelaying and photoreconnaissance missions. It has been equipped with a watertight rotary mine door in the hull where mines or camera pod can be installed interchangeably.—News item.

# Shipbuilding Program

Ship construction planned for Fiscal Year 1959 comprises 20 new vessels. The

new ships included in this program are:

Five guided missile destroyers.—Five similar vessels were authorized for construction under the 1958 program. The 1958 program vessels have a standard displacement of 3,370 tons and will be armed with the Tartar surface-to-air missile.

Six guided missile frigates.—Seven such vessels were authorized under the 1958 construction plan. These vessels have a displacement of slightly less than 5,000 tons. Other ships of this class are armed with Terrier missile launchers, antisubmarine Hedgehog launchers, antisubmarine Hedgehog launchers, antisubmarine Weapon Able (MR, Nov 1956, p 72), and four 21-inch torpedo tubes in addition to conventional weapons. Four of the seven vessels authorized for 1958 have been placed under construction.

One guided missile, nuclear-powered frigate.—To be powered by two nuclear reactors, this vessel is expected to have a speed of 45 knots or more.

One nuclear-powered, guided missile submarine.—Three similar submersibles were authorized in the 1958 program. These vessels will be armed with the Regulus missile.

One amphibious assault ship (helicopter carrier).—This is the second such ship to be planned, the first is an 18,000-ton vessel currently under construction. The helicopter carriers will be 600 feet long, and will carry 45 helicopters and a 1,500-man Marine assault unit.

Other new construction includes four nuclear-powered attack submarines, one amphibious transport dock, and one ammunition ship. The latter will be of the 7,500-ton Suribachi class.

Three nuclear-powered, ballistic missile submarines have been added to the 1958 program. Planned to be finished in 1960, these submarines will be designed to carry about 16 of the 30-foot-long *Polaris* intermediate range ballistic missiles. They will be 380 feet long and displace 5,600 tons.

Two cruisers are planned for conversion to surface-to-air guided missiles. Nine other cruisers currently are under conversion to *Terrier* and *Talos* missiles.

The atomic reactor of the Sea Wolf, second of the US Navy's nuclear-powered submarines, will be converted to a water-cooled reactor of the type used in the Nautilus. The Sea Wolf was constructed with a sodium-cooled reactor to provide a comparative operating test of the two different methods of nuclear propulsion. Other atomic submersibles have the Nautilus type reactors.—News item.

#### **Ballistic Missile Tracker**

The automatic tracking antenna TLM-18 is being installed at five sites along the 5,000-mile range of the missile test center



US Air Force Photograph
The TLM-18 automatic tracking antenna

at Cape Canaveral, Florida. The 60-foot web like antenna will be used to track ballistic missiles; the system will cover the entire range with overlap between adjacent stations. The five installations of the system are Cape Canaveral and Melbourne, in Florida; down-range bases at Antigua, British West Indies; Fernando de Noronha off the east coast of Brazil; and Ascension Island in the South Atlantic. —Official release.

# CANADA

# 'Sparrow' Missile Training

A team of Canadian Air Force personnel with two modified CF-100 aircraft are carrying out test firings of the Sparrow air-to-air missile at the US Naval Air Missile Test Center in California. The tests will permit the Canadians to become familiar with the Sparrow, which is to be used in the armament of the CF-105 Arrow (MR, Feb 1958, p 74), and to test fire control and auxiliary equipment. Several Canadian firms have received license to manufacture the Sparrow missiles.—News item.

#### **Warships Commissioned**

Recently commissioned warships of the Canadian Navy include the destroyer escort *Margaree* and the redesigned frigate *La Hulloise*.

The Margaree, which is armed with two triple-barrel Limbo depth charge mortars and homing torpedoes, displaces 2,600 tons and attains a speed in excess of 25 knots. A total of 14 antisubmarine vessels of this type are planned.

The frigate La Hulloise is one of 18 modernized River class frigate escorts. The 2,249-ton La Hulloise also is armed with triple-barrel depth charge mortars. It is capable of a speed of 20 knots. All of the River class frigates were launched originally during World War II.—News item.

# Naval Strength

During 1957 the aircraft carrier Bonaventure (MR, Apr 1957, p 68) and three modern antisubmarine destroyers of the St. Laurent class joined the Canadian

Fleet. class other are e the en had 4 mode marin dian

> equip the ( Navy ing e naval the a

On

Th wing with over cess

All-1

which fere Ade and guid

The solid mar and

Fleet. This brings to seven the St. Laurent class vessels now operational, and seven other similar vessels (Restigouche class) are expected to be completed in 1958. At the end of 1957 the Royal Canadian Navy had 45 ships in commission and five being modernized. Three of Great Britain's submarines also are serving with the Canadian Navy.

One naval air squadron has been equipped with CS2F-1 Tracker aircraft, the Canadian-built version of the US Navy's S2F, and another squadron is being equipped with the same plane. Two naval fighter squadrons now are flying the all-weather Banshee jets.—News item.

# **GREAT BRITAIN**

#### All-Weather Fighter

1958

Iel-

at

ndo

zil:

tic.

on-

are

ow

Air

The

me

to 105

est

ev-

nse

,-

the

es-

ate

wo

ars

ts.

his

18

ts.

ed

rs.

of

ed

WS

ıa-

ee.

he

an

The Gloster Javelin, a two-place, deltawing, all-weather interceptor operational with the Royal Air Force, can operate at over 50,000 feet altitude at speeds in excess of 600 miles an hour. The Javelin,



Javelin with Firestreak missiles

which has been announced in eight different versions, is armed with four 30-mm Aden guns mounted two in each wing, and can carry four Firestreak air-to-air guided missiles on underwing mountings. The Firestreak is an infrared homing solid propellant missile, also standard armament on the P.1 (MR, Nov 1957, p 70) and the D.H. 110 Sea Vixen.—News item.

### New Look for Army

The main feature of the organizational changes in the British Army will be the establishment of the self-contained brigade group as the basic formation. According to this system divisions will not contain a fixed number of brigades as in the past, but will be assigned armored and infantry groups according to the requirements of their military mission. The main part of the Central Reserve force will continue to be stationed in the United Kingdom and will be organized on the brigade group basis. However, a portion of the reserve is planned to be stationed in Kenya this year. As of April 1958 the Middle East Command released responsibility for the Arabian Peninsula to a new integrated command with headquarters in Aden. Headquarters, Middle East Land Forces is in Cyprus and is responsible for garrisons on Cyprus and Libya, and for United Kingdom commitments in support of the Baghdad Pact.-Official release.

# JAPAN

# **Nuclear-Powered Vessels**

Designs for nuclear-powered vessels are being prepared by seven Japanese industrial groups. The vessels under consideration range from a tanker displacing 65,000 tons to a 2,500-ton training ship.

—News item.

#### Plastic Rocket

What is said to be the world's first plastic-bodied rocket has been fired from a launching site near Akita on Japan's northwest coast. The nine-foot-long rocket was 51 inches in diameter and weighed 78 pounds. It reached a velocity of approximately three times the speed of sound. Originally designed for use in Rockoon experiments (MR, Oct 1956, p 67), the plastic rocket costs about one-fifth less than a metal vehicle of similar characteristics.—News item.

## NATO

# **Light Tactical Support Plane**

The second model of the Taon 1001 is being tested under the NATO program. The 1001 is a single-seat, lightweight, ground attack fighter developed to meet



French Embassy Press and Information Division Photograph Taon. 1001 single-seat fighter

NATO specifications. It emphasizes maximum speed at sea level, good maneuverability, and good takeoff and landing performance on unprepared strips. The first of these aircraft mounted an *Orpheus 3* turbojet engine of 4,850 pounds thrust. Later models will have the more powerful *Orpheus 12.*—News item.

# WEST GERMANY

#### Airbase Returned

The United States Air Force is planning on returning Neubiberg Airbase, just outside Munich, to West German authority. It was announced that the airbase will be made available to the new West German Air Force as part of the plan for the overall regrouping of US forces in Europe.

—News item.

# **Zeppelin Planned**

Plans for a 200-passenger airship are in the blueprint stage. The new Zeppelin is to use helium gas which will be furnished by the United States.—News item.

# EAST GERMANY

#### Reactor in Operation

East Germany's first atomic reactor has been placed in operation. The reactor, supplied by the Soviet Union, is water cooled, and has an output of 2,000 kilowatts. It is located at Rossendorf, near Dresden.—News item.

### BELGIUM

#### 'CF-100's' Received

The first squadron of CF-100 Mk. 5 aircraft, purchased for the Belgian Air Force from Canada, has gone into service. Belgian Air Force personnel for the operation and maintenance of the all-weather fighter aircraft were trained in Canada.—News item.

# FRANCE Civil Version of 'Noratlas'

The NORD 2508 is the second civil version of the basic design of the Noratlas 2501. The previous civil version, the 2502, has been in use for some time. The 2508 is equipped with two radial air-cooled engines, and has Turbomeca Marbore booster



French Embassy Press and Information Division Photograph NORD 2508 with wingtip jets

units mounted on the wingtips for additional power in takeoff and emergencies. The Noratlas weighs 23 tons at takeoff and can carry a payload of nine tons. The 2501 currently is under construction in Germany for use by the new German Air Force (MR, Feb 1958, p 72).—News item.

Subm The

hunter been of the ai The the Royce capab

to 205 1,550

> bomb ets ca and

Mac

played ble of altho consi Face in w

a diff that The bounthe is same

turbi velor poun

#### Submarine Hunter-Killer

The Alizé 1050, an antisubmarine, hunter-killer, carrier-based aircraft, has been ordered into production for use on the aircraft carriers of the French Fleet. The three-seat Alizé is powered by a Rolls-Royce Dart RDa 7 turboprop engine. Its capable of cruising at speeds of from 140 to 205 miles an hour, and has a range of 1,550 miles. Its armament consists of



French Embassy Press and Information Division Photograph Antisubmarine aircraft Alizé

bombs, depth charges, sonobuoys and rockets carried in the bomb bay, wing nacelles, and underwing mountings.—News item.

#### USSR

# Mach 2 Interceptor

The MiG-21 Faceplate, publicly displayed for the first time in 1956, is capable of speeds in the vicinity of Mach 2 although its maneuverability is restricted' considerably at supersonic speeds. The Faceplate is very similar to the MiG-19 in wing and tail configuration, but with a different fuselage shape due to the fact that the MiG-21 uses a single jet engine. The wing has a 57-degree sweepback with boundary layer fences halfway between the root and tip; the tail has about the same sweepback as the wing. The gas turbine powerplant of the Faceplate develops a thrust of an estimated 17,600 pounds with afterburner. This aircraft

also is reported to be equipped with a 4,000-pound-thrust auxiliary rocket. It weighs approximately 11 tons at takeoff, and its ceiling is about 11 miles with afterburner and about 13 miles with rocket power.—News item.

#### Political Education

Officers of the Soviet armed forces, to include the highest ranking generals and admirals, have been directed to attend a 50-hour course of political seminars and lectures each year. Special attention will be paid to the "ideological-theoretical preparation of leading military personalities" in the course. Attendance at the course has been made mandatory rather than voluntary.—News item.

#### Zero Length Launching

Experiments with zero length launching of the MiG-19 Farmer have been conducted successfully. In this type of launching, the Farmer utilizes a single solid fuel rocket engine mounted under the rear fuselage which is jettisoned when the speedy jet fighter becomes airborne.—News item.

# ITALY

# New 'G 91' Versions

The G 91 fighter aircraft (MR, Feb 1957, p 70), 27 of which were ordered for NATO tactical tests, is under development in two other versions, the G 91T two-place trainer, and the G 91R for photoreconnaissance. The training version is powered by a 4,230-pound-thrust Orpheus 4 tu\*bojet engine. Other versions have the more powerful Orpheus 3.

The G 91R is equipped with three cameras mounted in the nose of the aircraft. One camera points ahead and down at a 15-degree angle, and the other two point outward at right angles to the line of flight. This aircraft is fitted with pylonmounted wingtanks for extended range.

—News item.

# NATIONALIST CHINA

#### Vessels Received

The United States has turned over to the Chinese Nationalist Navy, 11 landing craft, three of which are equipped as rocket-launching vessels.—News item.

# COMMUNIST CHINA

#### Home-Designed Plane

Successful flights have been completed by the A2, Communist China's first homedesigned and home-built aircraft. A singleengine plane, the A2 is said to be equipped for night flying and blind landings.—News item.

### SYRIA

# Air Strength

The USSR has supplied Arab States with about 200 MiG-17 aircraft either directly or through Czechoslovakia. About 100 went to Egypt, 32 to Afghanistan, and 60 to Syria. The Syrians now have five MiG-17 fighter squadrons at bases in Hama, Sahl es Sahra, El Rasafa, and Damascus-Mezze. Further improvements are said to be underway at Aleppo and Chlive so that jet aircraft can be based there in the future. In addition to the 60 MiG-17's. the Syrians have some MiG-15's. The basic jet planes of their air force are still the British Meteor F. Mk. 8, N.F. Mk. 13, and the Vampire F.B. Mk. 5. They also have British and Italian trainers, and a transportation unit with C-47's, C-45's, and a few German J-52/3M's.-News item.

# HUNGARY

# Helicopter Planned

A prototype of a Hungarian-built helicopter is under construction, and test flights are scheduled for the summer of 1958. It is planned to have a cruising speed of about 80 miles an hour, a ceiling of 10,000 feet, and will be equipped with a gyrostabilizer said to be similar to that used in current Bell helicopters.—News item.

## **SWEDEN**

#### Defense Budget

Sweden plans to reduce her military manpower and increase the defense budget to make more money available for weapons development. It is planned that 2.7 billion kronor (540 million dollars) will be spent on defense during the coming budget year. This amounts to an increase of about 80 million dollars over the present budget. Reduction in armed force strength will include cutting the navy virtually in half over a period of years, providing 25 percent fewer aircraft to the air force, and the elimination of five regiments from the army.

Other elements of the record budget call for an acceleration of the atomic energy and research effort. Appropriations for activities in the nuclear field, including the building of more reactors, were increased by about 10 million dollars.—News item.

### Fighter in Production

The double-delta J 35 Draken, a single-seat jet fighter (MR, Apr 1957, p 69), is in production and will become operational with the Royal Swedish Air Force in about a year. The Draken, which an unconfirmed source credits with a speed of about 1,000 miles an hour, is powered by a Svenska Flygmotor RM6R turbojet engine. The RM6R is the Swedish-built version of the British Avon engine with afterburner. A more advanced version of the Draken, which is to be armed with air-to-air rockets and guided missiles and capable of a speed of about Mach 2, is expected to be in service by 1960.—News item.

S

ing

hav

of ]

selv

wh

un

the

sci

effi

of

By

re

tu

# IRAN

#### Mobile Radar Unit

A mobile radar training unit, supplied under the Baghdad Pact, is in use at a military airfield near Teheran. A team of British advisors is supervising the training of Iranian Air Force personnel in the operation of the equipment.—News item.

## EOREIGN MILITARY

# DIGESTS

### A New Nature of War

Digested by the MILITARY REVIEW from an article by Major R. Vardanega in the "Australian Army Journal," July 1957.

And in the event of a serious military conflict atomic weapons will inevitably be employed as a basic means of inflicting defeat.

-Marshal Georgi Zhukov, 20 March 1957

A designer of US ballistic missiles said today that a rocket could be built, with present knowledge, that could reach Mars in 400 days and return in about 320.

-Sydney Morning Herald, 20 February 1957

SCIENTIFIC advances rapidly are reaching the stage where the means to make war have proceeded beyond our understanding of how to apply them. We could find ourselves involved in a war of the future in which we would be hampered by techniques of the past—a war that could overwhelm armies and civil populations which were unprepared professionally and morally for the shock of events.

Since 1945 the most significant warlike scientific advances have been the increased efficiency in the development of weapons of mass destruction, and guided missiles. By comparison, all other developments are relatively unimportant insofar as the future nature of global war is concerned.

Since nuclear weapons established the supremacy of firepower over mobility, there has been a need to restore some measure of flexibility in war—guided missiles can do this.

#### The Probable Pattern

A global war with conventional weapons is possible only if man ignores the realities of today, and deliberately turns back the clock to 1944. All the evidence of history is against this possibility. Therefore, as a basis for our preparations it is a reasonable assumption that we should accept the fact that every available scientific device will be employed in a future major conflict.

What then is a probable pattern for

A

inter

haps

the t

stud

cept

of v

in t

case

with

selv

orga

ices

wea

mis

that

mur

sult

star

pro

volv

nat

exa

cur

I

tho

Wes

lan

the

wil

the

S01

ma

ar

0

S

M

A

future global war, and how will land armies be integrated into this pattern?

Much has been done about the organizations and tactics for armies in a war in which weapons of mass destruction merely replace conventional weapons. Surely this is a recognition only of the new weapon, while assuming that the means of delivery will not change the actual nature of war greatly.

#### Intercontinental Missiles

The proposition now put forward is that the weapon should not be considered separately, that it should be taken together with the method of delivery. Then the potential of both equals the total of the possibilities—intercontinental bombardment.

Recent events show that the United Kingdom does not regard lightly Russian threats of an attack using guided missiles armed with nuclear warheads. In such a war—and it must be accepted as a practical possibility—the final results may depend on these factors:

- 1. Neutralization achieved in the initial attack.
- 2. The speed and weight of retalia-
- 3. Effectiveness of interception measures subsequent to the initial attack.
- 4. The degree of internal stability which can be maintained in the countries subjected to this form of assault. Without a doubt there would be strong public pressures exerted in favor of capitulation to avoid further casualties and destruction.

Due to the absence of opposing armies, and the great distance to objectives worth seizing, it would appear that the army would have three main roles:

- 1. Preparation to meet any followup with assault forces (if this seemed likely).
  - 2. Internal security.
  - 3. Civil defense.

The first role is a familiar one and requires no elaboration; the second usually is

studied with a background that is seldom domestic and intimate; and, in peacetime, the third is not normally the responsibility of the armed services except to a very limited degree.

There would be serious difficulties to be overcome if, without previous arrangements and training in detail, an army were to be confronted with major responsibilities for internal security at home and for civil defense. Not the least of these problems are legal ones, and the previous preparation of government legislation of an involved nature, ready for proclamation, would be necessary.

The normal civil defense organizations could hardly cope with a situation arising suddenly and requiring simultaneous action on a nationwide scale.

#### **Preparatory Measures**

If we accept as fact the known presentday potential of guided missiles and mass destruction weapons, then it seems illogical not to prepare ourselves for the possibility of a future global war in which both are used to the limits of their capacity.

It is not suggested that the currently accepted theories on war are outdated, or that major changes in doctrines and organizations should be made. There is, however, a need for a wider concept of possible events and also for a more flexible professional approach to the problems which might arise in a future global war.

Intercontinental bombardment would, of necessity, bring the soldier, scientist, and statesman more than ever into a common field of thought and action. It also would ally more intimately the serviceman and civilian in a common battle for survival. It would be a negative approach to the problem for every soldier to wait until an official textbook is written to announce that science fiction is, to a worthwhile degree, scientific fact.

It is considered that positive steps of value can be taken by all officers.

An active interest in civil defense and internal security must be developed. Perhaps these subjects could become basic in the training of all ranks in the army.

58

ty

ry

oe.

e-

re

i-

or

b-

18

of

a-

18

c-

t-

SS

al

·e

h

f

n

d

d

1.

e

f

A professional responsibility for regular study of military subjects must be accepted. By this means the collective body of well-informed and up-to-date opinion in the army would be larger than is the case when mainly only those concerned with promotion examinations keep themselves abreast of developments in tactics, organization, and weapons.

Maximum use must be made of the services of officers with special knowledge of weapons of mass destruction and guided missiles. Unit commanders should assure that their subordinates attain the maximum knowledge in these fields. The resultant familiarity will bring better understanding.

Staff studies should be made of the probable tasks for the army in a war involving only intercontinental and/or international bombardment.

Other factors which invite the closest examination are time and space, and security. The potential for surprise attack may create a necessity for preparatory defensive measures to be a permanent requirement in peace; warning of an attack may be only a matter of hours or even minutes. Prior location of missile sites to ensure reasonable neutralization in retaliation, together with interception measures, present problems of special interest to the scientist. Perhaps manned or unmanned satellites in free orbit may offer a partial solution.

There is a clear need for the highest order of teamwork between the soldier and the scientist. Otherwise there may be a tendency for the soldier to underestimate the possibilities.

#### Conclusion

This is a superficial examination of a probable pattern for war when weapons of mass destruction are coupled with long-range missiles. It seems reasonable to consider the effects of such a combination at this stage because there now is sufficient knowledge of the effects of the weapon to proceed a step further.

Whatever the answers eventually may be, the problems themselves are worthy of serious consideration.

## Field Artillery in Atomic Warfare

Digested by the MILITARY REVIEW from a copyrighted article by Colonel M. St. J. Oswald in "The Journal of the Royal Artillery" (Great Britain) January 1958.

It has been stated publicly on good authority that in any future war atomic weapons will be used in support of our land forces. As a result it is possible that the organization and tactics of the army will undergo considerable alteration in the next few years. The structure of the division currently is under discussion, and some experimental changes have been made. It is, therefore, pertinent to question whether there is still a need for field artillery in the infantry division, and, if

there is such a need, whether it can continue to carry out its task with its present methods and equipment.

#### Defense

Even when atomic missiles become more abundant than they are at present, they still will be extremely expensive articles and uneconomical to use except against a worthwhile target. Just what constitutes such a target it is difficult to say, but it is unlikely that a missile would be used

po

int

lin

ge

us

me

We

pa

be

fo

at

pe

Ca

po

si

us

ti

T

A

pe

fo

a

C

fi

ir

g

fi

a

unless it was reasonably certain to destroy at least a battalion of infantry or equivalent unit. In view of the numerical superiority of our probable enemy this may be an underestimate.

Recent exercises have shown that it is by no means a simple matter to locate such a target and to guarantee that it still will be there when the missile arrives—often a matter of hours after the target is selected. An enemy who makes good use of camouflage or the cover of darkness, moves his assaulting troops rapidly forward from concealed concentration areas, and keeps his artillery silent until H-hour has every chance of gaining surprise, particularly if he also has air superiority.

#### Attack

The first indication that a large-scale attack has developed may be the urgent call for defensive fire from our infantry. Only when he has been brought to a halt will the enemy be forced to concentrate and so present us with a worthwhile and more easily identifiable target for atomic attack. The fighting in Korea confirmed the experience of World War II that the most effective method of halting the enemy is the concentrated fire of field artillery close in front of our own lines.

Should the enemy also make an airborne landing behind our front he may expose such a force to the risk of annihilation by atomic weapons. On the other hand, his objective may be a communications center—possibly a large and populous town belonging to one of our allies. The decision to obliterate such a town for the sake of destroying an enemy airborne formation is likely to be reached only after prolonged interallied discussion, whereas the immediate use of conventional weapons, including the field artillery, would be available to the commander on the spot.

For an army that is prepared to stake its future on the offensive from the outbreak of war there is greater justification for the reduction of its artillery. At the start of the last war the Germans suffered no handicap when they relegated their field artillery to a secondary place as compared with the dive bomber and the infantry mortar. Later in the war they had plenty of time to regret their decision.

There is, however, a case for claiming that with the initiative in our hands it would be enough to follow up a series of atomic explosions with tanks and infantry carried in cross-country vehicles or in helicopters. Quite apart from the fact that the British Army is unlikely to start another war under such advantageous conditions, we also must credit our enemy with the ability to move up reserves by equally rapid means, either to fill the breach or to counterattack the shoulders of the gap. Once at close quarters with these reserves, the attackers will require the support of field artillery not atomic weapons.

This concept is not dissimilar from that of "carpet bombing" in the later stage of World War II. A classical example of this was Operation Goodwood, south of Caen, where the initial armored attack was highly successful against enemy troops who were too stunned by the bombing to put up much resistance. Once through this belt, however, our armor outran its own supporting artillery and was held up by enemy reserves who were unaffected by the bombing. The same thing may happen if a number of atomic missiles are substituted for a large quantity of conventional bombs. One of the main reasons for the lack of success of Operation Goodwood was the failure to move the supporting artillery forward quickly enough.

#### Advance

In the advance it will be the enemy's skillfully handled rearguards which cause us delay. They seldom will present a worthwhile target for atomic weapons whose devastating effect might hinder our own advance by blocking the roads with debris. As in the past these rearguards

can be overcome best with the quick support of field artillery.

58

d

as

1e

y

n.

git

of

y

i-

at

1-

1-

y

y

rs

h

e

ic

ıt.

is

ı,

S

S

0

S

n

y

y

Admittedly, pursuit could be turned into a rout if a bottleneck on the enemy's line of withdrawal caused sufficient congestion of troops or traffic to warrant the use of an atom bomb. This is, however, merely using a more efficient air force weapon than has been available in the past on a target which normally is well beyond the range of field artillery.

#### Withdrawal

In the withdrawal the means necessary for a strike at the advancing enemy with atomic weapons may be lacking. Air superiority may have been lost and atomic cannon may be too precious to risk in support of our rearguards. Even guided missiles fired from farther in the rear can be used effectively only if accurate information of a worthwhile target is available. This is seldom the case in a withdrawal. As at present it is the rearguard, supported by artillery and engineers, who forces the enemy to reconnoiter and deploy at frequent intervals and so gain time in a withdrawal.

#### Threat to Field Artillery

In all phases of war atomic weapons are complementary to and not a substitute for field artillery. However, there is one role in which they are superior immeasurably, that is as a counterbattery agent. This term is used to refer expressly to the destruction or neutralization of enemy guns as opposed to mortars.

Our present methods demand the accurate pinpointing of hostile batteries which must then be engaged in turn by heavy fire from all calibers of the field artillery. This is laborious, expensive in effort, and, in the long run, not very effective. Against an enemy who possesses numerical superiority in guns and mortars it is out of the question.

On the other hand, an atomic explosion approximately over the center of a normal

division artillery area could cause such damage and casualties as to deprive the division of any artillery support whatever. Since atomic missiles are such excellent counterbattery weapons and because guns are more difficult to conceal and protect than infantry, the division artillery always will be one of the most likely targets for atomic attack. This being so, it is clear that our methods, which in general have changed very little since the end of the last war, require radical alteration.

#### Dispersion

The extent to which the guns of the division artillery can be dispersed depends on the width of the division frontage and on the range of the guns. It is necessary only to divide the front which must be held in Europe by the number of the divisions available, to realize that the days when a normal division frontage was 10,000 yards are long since over. In any case divisions will wish to disperse sufficiently to present the least attractive target possible for atomic attack. The only limit to dispersion is that it must not be so great that the enemy can break through without himself having to concentrate and so present a worthwhile target for atomic attack.

It is suggested that it might be the aim of the division commander to deploy his division in such a manner that any one atomic explosion would not knock out more than one infantry battalion or one battery. Although there is no finality about the radius of destruction which such an explosion will create and which may depend on whether it is caused by a bomb, a shell, or a guided missile, it is believed that a 3,000-yard gap between neighboring battalions or batteries would achieve the division commander's aim. This assumes that units are dug in with overhead cover.

If the division is deployed with three brigades (regiments) in line, each with two battalions up, and if each battalion area is approximately 1,500 yards in diameter, the division then will cover about

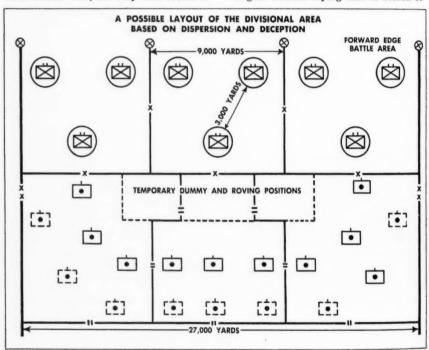
27,000 yards of the front. It is obvious that this front cannot be covered by all the division artillery with its present equipment. Indeed, no infantry battalion could expect the support of more than one field artillery battalion.

#### Deception

Closely linked with dispersion is the need for deception. Faced with an enemy who is prepared to use atomic weapons in a tactical role, the only safe course is area which must be left untenanted. It will, however, be necessary to simulate activity in this area by using it for temporary, roving, and dummy positions.

The selection of this area will have to be the first consideration when deciding on the deployment of the division. Each brigade (regimental) commander doubtlessly will produce good reasons why it should be as far away from his brigade as possible.

It goes without saving that in attack or



to present him with an attractive target on which to waste his efforts. He must be misled not as to the accurate location of individual batteries, but as to the entire division artillery area. This area must appear to the enemy to be a likely one and it may, therefore, be necessary to invite atomic attack on the heart of the division

defense no gun should fire from its main or alternate positions until the latest possible moment.

#### Concealment

Since the British Army trains on the assumption that it will start the next war under conditions of air inferiority, considerable attention has been devoted on exerc In

the c incre photo By fr

be p which essen

flag

terr

COV

per

are

ent

wei

A

exercises to the problem of concealment.

In war, once the front has stabilized, the concealment of gun positions becomes increasingly difficult against high-level air photography and modern locating devices. By frequent change of position it may still be possible to deceive the enemy as to which pits are occupied. It is, therefore, essential to have additional gun camou-

if all units in the division were made responsible for manning a number of smoke generators. There is an additional advantage that any form of smoke or cloud helps to reduce the effect of the heat and flash of an atomic explosion.

If the number of guns in the divisional artillery could be reduced without reducing the weight of artillery support avail-



The United States self-propelled 8-inch howitzer, M-108. Conventional artillery will continue to play an important role on the atomic battlefield.

flage nets and supports so that main, alternate, and temporary positions can be covered at all times.

Another solution would be to keep a permanent smoke haze over the division area during the hours of daylight. This is by no means impossible nor need it entail such large numbers of engineers as were used at the Rhine crossing in 1944

able, it clearly would aid concealment, since better use could be made of limited natural cover. A weapon with a higher rate of fire and a more lethal shell than the 25-pounder would be a step in the right direction. An alternative would be dualmounted guns on a self-propelled chassis—not an impossibility provided limited traverse is accepted.

serv

tille

exp

keep

mov

If ·

ator

nec

art

in t

art

wh

ato

by

cou

fiel

ha

col

tai

cla

mo

th

se

ke

he

at

e:

u

I

In

#### Protection

The standard gunpit gives very poor protection against an atomic air burst or, for that matter, against normal proximity fuze shells or napalm bombs. Pits must be either very much deeper or they must have overhead cover. The former are easier to construct but, if carried to extremes, will necessitate a gun which can fire at high angles of elevation. This in itself has great advantages as anyone who has had to fight in mountainous country would agree. It also would permit guns to be sited in broken ground such as the bottoms of ravines thereby securing excellent protection against atomic explosions.

To build overhead cover for main and alternate positions would be laborious even in a static war, and quite out of the question in mobile operations. If overhead cover is to be accepted as normal, there is an urgent need for a light, portable framework which can be erected over the pit and covered with the required depth of earth quickly.

Whichever type of pit is used, a mechanical digger on the scale of one per battery is essential if the field artillery is to get below ground level quickly. In doing so the field gun finally abandons all pretense of being able to defend itself effectively against tanks—from deep pits because it cannot fire horizontally and from pits with overhead cover because it is completely blind to the flank or rear.

The only alternative means of protection is for the field artillery to be self-propelled with fully enclosed armor. As protection against atomic explosion an inch or two of armorplate may not be as effective as three feet of earth, but at least it is always there whether in action or on the move. Such equipment also would have a fair chance of protecting itself against tanks, even if it was not capable of all-around traverse.

Protective clothing to reduce the effect of the flash and heat of an atomic explosion is, of course, the concern of the entire army. However, it is of particular interest to artillerymen because the artillery is a very probable target for atomic attack and because such clothing can be worn more conveniently by gun detachments than by the already overburdened infantryman.

Whatever means of protection are adopted they will be even more effective if some warning of atomic attack is received. There should be no particular difficulty in tracking the approach of hostile aircraft, although there will be no certainty as to their target or that any of them are carrying an atom bomb. Radar should be able to pick up a guided missile or a shell fired by a superheavy gun, either of which must be assumed to have an atomic warhead. The problem will be to broadcast a warning in time for it to be of any use.

If a radar warning center were established in the division or corps area it would be necessary for only batteries or troops to maintain a radio set on listening watch in order to receive prompt warning of approaching danger. Doubtless there would be many false alarms, but even a few moments' notice would save many casualties.

#### Mobility

Artillery is most vulnerable when moving, and the least time it spends doing so the better. In a mobile war it is inevitable that the artillery should be on the move frequently. Even when the front stabilizes, the field artillery will have to move more often than in the past.

In defense, moves from temporary to main positions will require good timing in order to continue to mislead the enemy as to the real gun area for as long as possible, and yet to ensure that main positions are occupied before the enemy launches his attack. Moves to alternate positions will be hazardous and must be carried out as quickly as possible. Re-

serves, including a proportion of field artillery, may have to be moved forward rapidly to plug a gap created by an atomic explosion.

958

n-

ar il-

ic

be

h-

ed

re

ve

e-

fi-

le

r-

of

ır

le

er

n

to

e

it

r

g

e

y

e

e

e

Š

In attack it always will be desirable to keep the field artillery well back and move it forward shortly before H-hour. If the enemy's front is broken by our atomic missiles, rapid exploitation will be necessary to achieve victory and the field artillery must be prepared to move fast in the wake of the armor or infantry.

In any case, it is probable that the field artillery will have to move across ground which has just been devastated by an atomic explosion. Roads may be blocked by fallen trees and debris, and only crosscountry movement may be possible. If the field gun is to remain wheeled it must have a new prime mover with a high crosscountry performance. This almost certainly means a tracked vehicle with a firstclass winch. It is obvious that so far as mobility over short distances is concerned. there is everything to be said in favor of self-propelled field artillery, preferably kept supplied with ammunition by cargo helicopters.

#### Communications and Control

The disruption of all communications is one of the most serious factors of atomic attack. Telephone cable is likely to be affected chiefly. Overhead crossings or cable laid along hedgerows almost certain are to be cut by flying debris. The heat of an explosion probably will melt the insulation of all cable near ground zero unless it is buried—an almost impossible task except under completely static conditions. The only alternative is for cable to be covered with heat-resisting material.

The danger to wire communications will throw an even heavier burden on wireless means. Radio sets will have to be protected by being below ground or in armored vehicles. Spare aerials will be needed to replace those damaged by blast. The range of sets must keep pace with

the requirements for increased range of the field gun. As a minimum the standard radio used by the field artillery should guarantee communication over 15 miles by day or night.

The dispatch of operation orders and other directives by road through a recently devastated area may well be impossible. There is, therefore, a need for a number of small, fast cross-country vehicles or, better still, for a helicopter dispatch service within the divisional artillery.

The headquarters of an artillery battalion should be so organized that it is capable of temporarily taking over the duties of artillery headquarters at division if the latter is put out of action. There is no great problem in this as it merely entails the addition of sufficient duplicating machinery to produce fire plans and overlays. Similarly, battery command posts should be ready to assume the duties of the battalion command post.

#### Summary

It lies within our ability to put many of these matters right, and to ensure that the training of the field artillery bears some relation to the conditions which it may have to meet in war. Although most exercises mention the atom bomb in the opening narrative, our methods have changed remarkably little since the end of the last war. Battalions deploy in much the same way as they always have done, little effort is made to achieve deception or to dig anything better than the standard gunpit, movement generally is confined to roads, subordinate headquarters seldom assume the duties of their superiors, and telephone lines still are festooned along the hedgerows. There is no protective clothing, and little or no training is done within units in first aid against burns or in rescue work. In our state of preparedness we compare very unfavorably with the standard of antigas training in 1939.

a W

Fren

cal (incl

none

in K

force

TI

vers

in the

sion

al

bi

m

d

n

pa

th

of

ve

Perhaps the main reason for this failure to train realistically is the general realization that with its present equipment the field artillery cannot survive and continue to carry out its tasks. There is indeed an urgent need for a new field gun. This gun must have:

Range.-At least 25,000 yards.

Protection.—Either prefabricated overhead cover with one mechanical gunpit digger per battery or, better still, a selfpropelled mount with enclosed armor.

Mobility.—Either a tracked prime mover or, preferably, a self-propelled mount.

Accuracy.—At least as good as the 25-pounder.

It would be a great asset if the gun:

- 1. Had a higher rate of fire and a heavier shell than the 25-pounder, say 12 rounds per minute, and a 35-pound shell (the US 105-mm howitzer shell weighs 33 pounds).
- 2. Had a twin-mounting on a self-propelled chassis.
- Could fire at high angles of elevation.
   Additional equipment required by field artillery includes;
- 1. Radio sets with a guaranteed range of 15 miles.

- 2. Telephone cable with heat-resisting insulation.
- 3. Helicopters for ammunition supply and dispatch service.
  - 4. Early warning broadcast system.
- 5. Protective clothing for gun detachments.

#### Conclusion

The cost of this new field gun would be very great but no more so than reequipping the Royal Armored Corps with Centurion tanks, and a great deal less than bringing a new fighter into service in the Royal Air Force. For some reason, it seems to be accepted that the life of a field gun is about 25 years and there is no need to reequip the field artillery at more frequent intervals.

To start another war with our present equipment would be fatal, not only to the good reputation of the Royal Artillery, but to the safety of the entire army. Now that the infantry has been supplied with a new range of antitank weapons and is beginning to receive its automatic rifles, it is surely high time that the field artillery received its due. The keenest supporters of our reequipment ought to be the infantry.

## **Mobility of Land Forces**

Digested by the MILITARY REVIEW from an article by Colonel B. E. M. Close in "L'Armee La Nation" (Belgium) August 1957. Translation by Captain A. J. M. Troquet, Belgian Army.

IN 1939-40 Hitler, combining mobility and shockpower by methodically fitting together tanks and aircraft, paralyzed Poland and the Western armies in a few weeks. However, his obsession with mobility when he was without the means for making it a reality, his lack of understanding of logistics, and the winter campaign with poorly adapted troops and matériel stopped him short of his objective.

On the Allied side the British created their Eighth Army gorged with trucks.

Splendid in the desert, it was brought to a standstill in Italy by Field Marshal Kesselring who was highly mobile despite his medieval transportation. At the end of the campaign the Eighth Army regained its mobility although it retained only those vehicles essential for the pursuit.

Meanwhile, airborne units saw the light, but their mobility was somewhat illusionary. They were not able to carry out a sustained action and, above all, could not win a war by themselves. In Indochina the French possessed an almost total strategical mobility but their tactical mobility (included logistical support) virtually was nonexistent. The case was almost the same in Korea, but there the United Nations forces regained their mobility by using the helicopter.

y

This outline of the successes and reverses which the mobility factor caused in the past, permits the following conclusions:

- The most completely mechanized armies are not necessarily the most mobile: they can be brought to a stop in many different ways.
- 2. The tactical mobility of an army depends on the adaptation of its equipment, arms, and training to the time and theater of operations.
- 3. The organization, the chain of command, and the size of the staffs have a leading influence on the mobility factor.
- 4. Mobility implies, furthermore, a certain state of mind on the part of the leader. Lack of mobility of mind leads to shortsighted plans and to a slow execution. On the other hand a commander quick in mind but poor in means cannot implement plans which might otherwise succeed.

#### Increased Importance

Mobility often has played a decisive part in military history. What strikes the mind today is the overriding acuteness of this factor in the atomic era, when power of material threatens to eclipse the conventional military values. Three elements have brought this factor to the fore:

- 1. The strides of science and technology.
- 2. The nature of the future conflict.
- 3. Conditions for the defense of Europe.

#### Science and Technology

Since the Korean war the international tension has accelerated the tempo of development of modern science and technology. The *power* factor now, and in the future, possesses at one and the same time a tremendously destructive and an extraordinarily creative complexion.

Guided missiles with atomic warheads, and transport aviation tend progressively to replace conventional weapons and transportation. At this very moment research and development agencies are thinking of miniature atom bombs the size of a grape-fruit, mounted in small guided missiles carried on jeeps.

Tanks and armored carriers will be equipped with turbine engines; 90-mm antitank self-propelled guns will be common, along with antitank guided missiles like the French SS-10. Commanders will use television and well-dispersed mobile units able to fight independently by night. Also, they habitually will utilize air transportation.

One can criticize the high cost of such fleets of transportation aircraft. The same arguments, however, were used against the railways of Moltke. Nevertheless, they furnished him a high degree of flexibility during the Austrian and French wars.

#### **Future Conflict**

The universal nature of the future conflict was born in World War I with the intervention of the United States. World War II emphasized this influence but added the USSR to the major powers. With almost limitless resources, both powers quarrel about the direction of the world's affairs, and thus are destined to intervene on all continents. Both, to a different degree but still vital for the United States, are obliged to adapt their forces to versatile transportation, thousands of miles from their bases.

This leads not only to a requirement for close cooperation between land and air forces, but also to recourse to civilian air companies for help in transportation.

The total nature of future war is the result of the technical developments of the armies, and of increased activity in

the field of ideologies. The effect of the requirements of national defense on the industrial and economic power of the nation accented the technical aspect of the problem born during World War I. During World War II the systematical organization of scientific research has reemphasized this total nature. This increased importance finds expression in a reduc-

all over the world. Propaganda and radio allow the enemy to create a permanent state of insecurity anywhere.

However, the defense and consequent national action will be efficient only if troops possess the three-dimensional mobility sufficient to oppose the enemy forces quickly and effectively, and to destroy them.



Tactical assault aircraft such as the C-123 Provider will be of increasing importance in attaining the mobility required by modern warfare.

tion of the available manpower for the forces.

On the other hand a natural attraction has centralized "satellites" around both big powers and has favored invasion by ideological subversion. Accepting ideology as a weapon, the USSR attempts to give any conflict a subversive nature.

This subversive nature has spread war

To sum up, the universal, total, and subversive nature of the next war has imposed on the armed forces the necessity for an intercontinental strategical mobility—an extreme tactical mobility at all echelons.

#### The Defense of Europe

Notwithstanding the disadvantageous disproportion of the Western effectives facing So

chance ously, correc

In Germa highly sions greate air su

In t

third slowly and t uncea accor divisi armo howe powe the S

The be ver for thus above dimestay:

orga How are a g pall

quit Care mob

1 pos

arn goo ing Soviet masses, B. H. Liddell Hart states that:

58

io

ıt

it

f

S

Current NATO forces have a better chance than imagined to resist victoriously, provided they understand and apply correctly the tactics of mobile defense.

In the German actions in Russia and Germany, small, hard-hitting groups, highly mobile and acting in two dimensions only, were able to hold 10 times greater forces in check in spite of enemy air superiority.

In the future, west European land forces will be much more mobile, employing the third dimension; they will withdraw as slowly as possible, leaning on Scandinavia and the Balkans, and striking the enemy unceasingly. These spiderweb tactics need, according to one expert, 80 highly mobile divisions, of which 50 percent should be armored. Some military experts think, however, that 25 mechanized divisions, powerful but mobile, could suffice against the Soviet forces.

These thoughts on mobility appear to be valid both for the forces in the field and for the Zone of Interior defense forces. Thus the future of the land forces lies, above all, in the research for the three-dimensional mobility and for an increased staying power.

#### Organization of Units

There are many discussions about the organization to be given the armed forces. However, the opposed arguments actually are about equal, for all things considered, a good leader with a mobile mind will palliate the relative weaknesses of a not quite perfect organization.

Concerning the Belgian forces, five rules are essential for obtaining the required mobility:

1. The combat squad or section must possess an organic vehicle, cross-country, armored, with a mounted weapon and a good radio set.

- 2. The combat command concept as known in the United States armored division should be retained.
- 3. Lighten the logistics by the following:
- a. The squad vehicle can carry the basic load and the reserve rations for the entire mission, although some supplementary supplies may be brought to the squad by land or air.
- b. General depots must be numerous and dispersed throughout the combat zone.
- c. Unit distribution must be generalized by land and air.
- 4. The method of command at division level and lower must be more direct. The



Armored amphibious vehicles provide needed tactical mobility. Above, the US

commander should conduct the operation, not the chief of staff. Before the battle, subordinates must be informed of the intentions of the commander. Orders issued by streamlined headquarters will have to be short, and personal contact during the battle will have to be used to stimulate the units and keep them in the picture.

5. Finally, land forces must be able to be air transportable on either an intratheater or extratheater basis.

Even if our national resources oblige us to limit the reforms to a better utilization of the existing means, we can increase the mobility by giving the infantry division an organization similar to that of the armored division and by reducing the number of battalions in both divisions by one-fourth or more.

Basic divisional units will use their organic vehicles, equipped with radio, in order to avoid waiting and hesitations. Obviously, their mobility will be bound to the roads and their dispersion made difficult. During combat the speed will be reduced to that of the foot soldier. But mobility of infantry can be increased by a reduction of impedimenta. Actually, men in combat consume less ammunitions and rations than imagined. However, mobility bound to the roads is only a last resource, and must be considerably increased by development of a cross-country and airtransportable capability.

#### Conclusions

The future of land forces lies in an everincreasing mobility. This mobility, in turn, lies primarily in the concept of commanders and staffs oriented toward speed. It lies also in a lightening of equipment and in its tridimensional adaptation to the new power. Finally, the organization of multiweapon groups at the lowest echelon sustained by streamlined logistics is needed.

For the Belgian Army the difficulties are more a question of manpower and budgets than of intentions. Therefore, we believe that our aim must be the creation of a state of mind, a lightening of the combatant, and equipment in three-dimensional arms and transportation means.

Lack of manpower is only a supplementary argument in support of our thesis. Mobility of land forces, such as is considered here, is the only guarantee for the realization of this multiple effect.

Organization and mobility are only means, made concrete by more or less improved matter. Finally, it is leadership and man's morale which will provide a maximum efficiency.

## The Infantry of Tomorrow

Digested by the MILITARY REVIEW from an article by Colonel Lazzaro Dessy in "Rivista Militare" (Italy) April 1957. Translation by Mr. LaVergne Dale, Leavenworth, Kansas.

In the copious military literature which has marked the postwar period, it has been theorized generally that the conflict of the future would be characterized by the exclusive employment of missiles, nuclear weapons, and electronic means.

War would be of the "pushbutton" type. Armies are to be dismissed from their traditional role and the field cleared for a struggle carried on from a distance of thousands of miles with devices whose destructive capacity alone would suffice for rendering one of the contenders helpless.

The extreme feature of this doctrine resides in the fact that, in opposition to the history of thousands of years, it annuls all tactical value and conducts war on the exclusive plane of pure strategy. At the

root of this theory, in spite of appearances and the contradiction of the inevitable catastrophe of such an all-embracing conflict, is the aspiration, particularly strong after the horrors of the Second World War, of reducing the struggle to a duel of machines designed to knock out the economic and industrial apparatus of the enemy. Thus his will and ability to fight will be broken in a very short time.

A war would be confined to a limited number of technicians and the population would take part more or less passively. But in this denial of the possibilities of tactics is the Achilles' heel of the "pushbutton" theory.

It must not be forgotten that, for three years, Germany was subjected to massive

stroy tion will a Russ betw Gern derg cond man This

the long the regularist there cess tacti

T

the to a

To

clea in i men the how cau in mea

the ant dan be

cur

the rai

of far fac bombing attacks which should have destroyed her will to fight by the ruination of her war potential. In reality, her will definitively was broken only when the Russian and American vanguards met between the Elbe and the Oder Rivers. Germany, in spite of the destructions undergone, continued to fight albeit under conditions of definite inferiority to the last man and to the last piece of ammunition. This lesson evidently has been underestimated by the partisans of the new theory.

8

t

ì

Today, armies are still fundamental in the military power of a country and, so long as the latter has the final word and the armies constitute the *ultima ratio regum*, tactics will have their place alongside strategy. One must always arrive, therefore, at the definitive results of success by the hard, long, and bloody way of tactics.

The strategic objectives of the war of the future undoubtedly will be restricted to aviation and missiles operating with nuclear explosives—nor could it be otherwise in intercontinental strategy. The attainment of success against such objectives by the employment of these means alone, however, seems impossible. This is true because of the dispersion of the objectives in a theater of operations which, in its mean dimensions, could be equal to at least half of our planet, and because of the eventual development of an effective antimissile and antiaircraft defense.

Armies have not lost their ancient fundamental importance. They always will be required in the end, either for the occupation of the enemy objectives or for the defense of their own.

#### Infantry and Armor

With the advent of atomic weapons in the tactical field many voices have been raised denying that the fundamental role of the basic arm now pertains to the infantry. In short, they affirm that, in the face of the hitherto unimagined firepower of the atomic weapons, the infantry is powerless and the new armies will be constituted exclusively of armored means. The same ideas are repeated in the tactical domain that are maintained by the theoreticians of pushbutton warfare in the strategic domain, and the same conclusions are drawn canceling out or reducing the infantry to an almost symbolic expression. But here, also, long-range vision overlooks the immediate fundamental which is of decisive importance, namely, that the enormous volume of fire released by the pent-up nuclear energy will knock out either the ones defending or the ones attacking an objective on the ground.

The presence of the atom bomb really raises no argument directly affecting the infantry itself, but rather, creates doubts concerning its present composition, the proportion of its units with respect to those of the other arms—particularly those of the armored arm, its armament, and its methods of employment.

There is no doubt that while tactical nuclear weapons are available only to a limited degree, their repercussion on the infantry cannot reduce the importance either of the infantry or the other traditional arms of the service.

However, with atomic weapons available in large quantities, the question is, to what degree do the principles of the employment of the ground forces remain valid with the atomic weapons assuming the leading role? One thing immediately seems certain—of all the arms, the infantry and the armored arm will feel the supremacy of the atomic arm to a far lesser extent than any of the others because:

The infantry, due to the capillary character of its action and to the possibility of digging itself in, will be able to escape annihilation more than the other arms.

The armored arm, by virtue of the protection offered by its armor and its

great mobility, is particularly suited for operating in an atomic environment.

#### Transition

History, which possesses a capacity for judgment with reference not to the more or less brief span of the lifetime of individuals but to a period of centuries, assigns the quality of transition only to certain eras. These eras are marked by a real transition from one economy, one social organization, or one manner of living to another.

Our generations, which have lived through the two World Wars and which still possess the memory of the "good old days," surely have this transitional characteristic. Militarily, they have had to face radical evolutionary changes stemming from these wars, and are engaged, today, in the solution of the new and revolutionary problem posed by the advent of the nuclear and electronic means.

Born in the era in which the infantry fought in formations not too unlike those of a parade, and passed through an evolution as rapid as it was tumultuous, it is the task of the men of today to lay down new lines of organization, employment, and training for the infantry, projecting their minds beyond the dark veil which hides the war of the future. The thicker and more mysterious that veil, the more difficult it is to draw the picture of the methods of employment and the organizational and logistical physiognomy of the infantry of tomorrow.

Atomic fire is the new element which, in the form of missiles, aerial bombs, and artillery projectiles, is changing the characteristics and expanding the dimensions of the traditional field of battle.

This weapon alone has spelled the end of the massive defense lines of World Wars I and II, and the equally massive formations of offensive power which were used to breach those lines.

We can affirm that on the battlefield of tomorrow the infantry will consist of a considerably reduced number of battalions.

It has been said that it is the base which is reduced. This is true only in appearance, since the reduction in size is accompanied by an increase in power of the unitary portions of the base. The increase of the power factor is such that it compensates largely for the quantitative diminution.

#### Means

However, the increase in power is expressed in more modern and improved weapons, and in new means. In its human aspect, this comprises the raising of the qualitative level of the men destined for the infantry units. The infantry arm characterized by mass belongs to the past—the modern infantry is an arm of quality.

Rarefication characterizes the deployments facing one another on the battle-field. Wide and empty spaces are interposed between the various elements with which defense is organized. The units which constitute the formations of attack also are spaced widely. Each of the two contenders seeks to control these spaces as closely as possible, and in these empty spaces, the employment of atomic weapons is already planned for use when a sufficiently paying target has formed during the battle.

These conditions impose on the infantry the necessity for:

- 1. Digging itself in as deeply as possible in defense.
- 2. Being able to displace rapidly in order to form attack formations, organize itself for defense in new positions, or participate in counterattack actions.
- Maintaining an alert observation of the surrounding spaces and readiness to ward off vigorously any threat appearing in them.
- Effecting rapid movements into the enemy's depths for the immediate exploitation of atomic explosions.

In order to be able to answer these demands the infantry is heading in the direction case, try eaction Th

legs

backs will lof in speed of sp

Th

have

sian of th for and, visio field, porte

those the eventivalid reason The fants

Th

the cadmothat the famore power again during

Of will of in kind fire initis

initi: sary dept direction of total mechanization. In any case, it may be presumed that the infantry employed in attack or counterattack actions always will be mechanized.

S.

h

r-

nne

se

1-

n-

K-

n

1e

r

r-

y.

y-

e-

r-

h

ts

t-

ne

se

se

ic

n

be

y

i-

r-

ze

r-

to

ıg

i-

he

The days in which infantry had only the legs of its soldiers for locomotion are past forever. Movements in depth forward and backward on the battlefield of tomorrow will be about 30 to 60 miles, and the units of infantry will be obliged to adjust the speed of their movements to this extent of space.

The first helicopterborne units already have appeared in the American and Russian Armies. Therefore, the exploitation of the third dimension no longer is reserved for a few specialized parachute forces and, in the strategic field, to airborne divisions. It is now possible, in the tactical field, for normal infantry units to be transported by helicopters.

#### Tactics

The atomic threat will be annulled for those infantry units in close contact with the enemy. Under these conditions the conventional methods of war will become valid, though dispersed in space. For this reason, attack fronts will be broad.

The 1929 edition of the Manual of Infantry Employment prescribes the reduction of fronts to half the normal breadth in the case of an attack on organized terrain. The experience of the Second World War admonishes that the more solid the defense that is to be attacked, the more tenuous the formations must be. The stronger and more resistant the objectives are, the more powerful the fire destined for employment against these objectives both before and during the attack.

Offensive power of the future, therefore, will be marked not by successive echelons of infantry destined for repeating the same kind of effort, but by the intensity of the fire destined for opening a breach for an initial attack echelon, followed, if necessary, by successive ones to a considerable depth.

Attacks conducted by concentrated dispositions today would be doomed to certain destruction during the formation of their echelons at their base of departure. It follows, then, that the flanks of the attack units normally will be open.

The continuous fire which characterized the defensive organizations of the past can no longer be counted on to arrest the attack or ensure success in resistance. The fire of the static elements will not be able to break the enemy's attack whether the form of organization of these elements be linear or whether they be organized as strong points. The function required of these elements is to channelize or concentrate the attacking force to provide remunerative targets for the employment of the atomic weapon. The elements of static defense are, above all, destined to constitute centers of maneuver for the counterattack.

The patrols, normally mechanized, will have the task of controlling the empty spaces, integrating air and ground observations. They must push forward to a distance of many miles in a security zone which probably will possess the characteristics of a "no man's land," intercept enemy patrols, and maintain a lookout for penetrations for major forces.

In attack it will be the patrols thrown out at a distance from the flanks that will ensure their security. In the preparation for the attack, the patrols must determine the extent and strength of the enemy's defense organization. Tasks such as these certainly are not new, but they assume a fundamental importance in the new spatial conditions in which they are performed.

Whenever possible the infantry will seek to exploit the great possibilities of penetration offered by the tenuous atomic deployments for coup de main, bold incursions in depth, and the destruction of especially important objectives. Many of these will be unexpected small actions carried out usually at night.

#### The Units

The traditional wall which separates the various arms has become attenuated to the point where it is principally of a purely symbolic value. The war of tomorrow will see the differences between infantry, artillery, and armor still further attenuated.

A battalion which associates, for combat, elements of mechanized infantry, tanks, and artillery with predominance depending on the mission assigned, perhaps, could represent a solution for tomorrow. The tanks ensure the indispensable quantity of firepower and shock in the fighting which the infantry will have to face, and the artillery ensures barrage fire in defense and close support in attack.

The binomial infantry-armor, with a preponderance of infantry or armored means in accordance with the situation and the task, will acquire in the future a value much superior to that of the past.

The battalion, although retaining the imprint and physiognomy of infantry, probably no longer will be the fundamental unit of tactical employment, but will represent the central nucleus of a complex multiarm organization.

The operative importance of the battalion naturally will be superior to that of the present time and it is indispensable that its logistical possibilities correspond to the characteristics of its new employment. It will be necessary, that is, that the logistical autonomy of the new battalion meet the demands imposed by its operational autonomy and its increased dynamism of maneuver.

#### Weapons

It is difficult to foresee the future of the infantry regiment. One thing seems certain, however, that if the battalion becomes the first unit to employ multiarms in the future, the regiment, providing it survives, can possess no more than combined-arms groupment command functions.

From studies on the standardization of

armament it has become apparent that the armament of the infantry, although inspired by the idea of greater power and a lesser variety of means, will not differ much from that of the present since the "effects" which the infantry will have to obtain remain unchanged.

We shall have, therefore:

Weapons for antipersonnel action at short and medium distances: the pistol; the machine pistol; the automatic rifle, capable of employment on a bipod rest; the machinegun, capable of employment on a bipod and on a tripod rest; rifle grenades; and, perhaps, a weapon of 20-mm caliber, capable of employment on the ground and in a tracked vehicle and also capable of effective employment against light tanks and slow aircraft flying at a low altitude.

Weapons for antitank action: an improved bazooka for close action; self-propelled (or tractor drawn) cannon for action at medium distance; and guided missiles for long-range action.

Light, medium, and heavy mortars destined for operating in the framework of the battalion even if assigned to higher levels.

Weapons for antitank action (of the twin-barrel, self-propelled type) not assigned organically to the battalion, but destined for acting with it.

#### Personnel

It will be necessary to improve the sources of troop recruitment and, above all, of the cadres of officers and noncommissioned officers. This will, without question, be facilitated by the inevitable reduction of the number of units. To the reduced quantity there cannot but correspond a considerable improvement in quality.

In the past, if the best officers and noncommissioned officers have predominantly found employment in the mortar, engineer, and signal communication units, hereafter they must be employed for officering rifle squads, platoons, and companies.
strength
weapons
will be
will op
must ha
on then
the acti

It is groups around therefore tality mande In V

of the
his m
meani
"leade
it wil
morre
to co
of his
In
empl

Sovie of the In may it is trainer's qual to the self.

the

of

panies. These are the elements to be strengthened since the accompanying weapons, artillery, tanks, and engineers will be grouped around these units and will operate with them. The rifle units must have the most capable cadres because on them rests the true responsibility of the action. Along the lines traced by these the others must give their cooperation.

1958

the

in-

and

fer

the

to

at

ol:

le,

st:

on

e-

m

ne

30

st

a

1-

-

d

It is not improbable that the tactical groups of tomorrow will be constituted around the rifle company. It is necessary, therefore, that the combined-arms mentality be strengthened between their commanders.

In World Wars I and II the commander of the platoon was thought of as leading his men against the objective. Without meaning to minimize the value of the "leader" from the point of view of morale, it will be very difficult in the war of tomorrow for the commander of the platoon to command in attack action at the head of his unit.

In fact, the regulations concerning the employment of the rifle platoon of the Soviet Army prescribe that the commander of the platoon must be in the rear.

In order that the platoon commander may remain in his proper place in combat, it is indispensable that his men be well-trained. The necessity for the commander's being in the lead was due to inadequate training on the part of his men and to the fact that in war, this manifests itself always and inexorably in the form of a lack of punch and morale.

#### Training

From the point of view of this necessity, the panorama of the training of the riflemen of tomorrow comprises:

Military training in the form of an accentuation of gymnastic and sports activity that will make every man inured to hazards.

Thorough field training that will render every man a personally active element who knows how to make full use

of every advantageous feature of the terrain.

Training that will improve skill in moving and operating at night, and accustom the man to look on darkness as his friend and not be subject to the depressing effect which this exerts on those who are not accustomed to it. It is quite true that night training has been prescribed for many years, but how many engage in it-seriously?

Patrol training, both foot and mechanized. This brings individual and ensemble training to the point of maximum effectiveness, namely, that of instinctive cooperation between the various elements of the patrol.

Where these premises exist, the rest comes of itself, and it is easy with men trained to organize and conduct actions of any type.

The training of the infantryman of tomorrow will be very similar to that of the paratrooper of the Second World War. He will find on the field of battle his "own" field of battle—the possibility, that is, of expressing his individuality, that individuality which was annulled in the mass attacks of the past wars.

Rapid movements obviously must be met by rapid reactions, sudden changes of situation must be countered by immediate decisions, and initiative will have almost limitless possibilities. The spiritual and professonal preparation of the cadres then will be of fundamental importance.

This preparation certainly cannot be acquired during brief periods of command and in still shorter periods of exercise. It is to be desired that the arduous creative work of the training camps be completed in the shortest time possible, for the infantry units of tomorrow doubtless will have to spend many months of the year in the field.

#### Conclusions

We may, therefore, conclude that: The infantry, although possibly losing part of its importance in the face of a generalized employment of atomic weapons in the tactical field, retains and shares with the armored arm the role of basic arm of the army.

The other arms—tanks, artillery, and engineers—must cooperate with the infantry in a much closer way than in the past.

In close combat, that is, at a distance less than that minimum permitted by the employment of the atomic weapons, there will be reproduced the classical modes of employment of the infantry with the variations imposed by the adoption of the new longer-range weapons.

Night combat will be normal. Not only will patrols and platoons use this method for coup de main, but more complex units may resort to it.

The static methods and slowness which characterized the infantry of one time will be replaced by an entirely new dynamism and rapidity.

The infantry units will be suited particularly for maneuvering and for remaining relatively isolated through their capability of keeping the surrounding spaces under continuous and watchful observation.

Command of the units of infantry (battalions, companies, platoons, and squads) will require much greater ability than in the past, and for this reason selection for the infantry must be much more rigorous than previously. To be able to permit accession to the superior grades of command by the most qualified command elements, it seems necessary to conduct this selection on a broader basis.

## The Militia Army in the Atomic Age

Digested by the MILITARY REVIEW from an article by Urs Schwarz in the "Swiss Review of World Affairs" (Switzerland) October 1957.

Tactical atomic weapons have become a firm part of the armies of nations that wish to be regarded as world powers. Since the destructive potential of the longrange weapons has been understood fully and today, extended methods of large-scale warfare must perforce include secret agents, parachute troops, groups of saboteurs, and propaganda, efficient home defense is being considered in a new light everywhere. The dangers are so many, and the form of warfare seems so completely changed, that every possibility of defense and its adaptation to the new factors must be examined.

One of the many possibilities is the inclusion of a militia in the system of modern home defense. This at once raises the questions:

Is a militia army sufficient to defend a

country in this age of highly technical warfare?

Can a militia army be combined in some form with a regular army to serve a useful purpose at the present time?

Does the militia system perhaps offer particular advantages in the atomic age?

To try to answer these questions in a concrete way, the problem will be looked at here from the viewpoint of the Swiss solution.

#### The Swiss System

The strange and successful development of the Swiss militia army into one of the strongest armies in Western Europe rests on various factors.

There is a corps of regular officers, the so-called "officer instructors," who are the teaching body. Since the beginning of this century they have succeeded in meeting the hig or star standa The

and the officers regime erally a large comma which guara duties of time from knowless.

Muing. A finish and a soldie cer. A taine of five on is gire.

life.

has monto This of s assig cour so a ice betw

line assi mus yea troo

line

sho as and ices the high demands of the foreign, regular, or standing army, and in applying these standards to the training of Swiss soldiers.

958

ich

rill

sm

ic-

n-

2-

es

a-

t-

3)

in

or

18

c-

id

S,

2-

The commanders of divisions and corps, and the general staff are all professional officers. Officers entrusted with a battalion, regiment, or brigade may have and generally do have a civilian job, but devote a large part of their spare time to the command and training of the troops for which they are responsible. This system guarantees that the contact with military duties is never broken for a long period of time, and that the army can benefit from the experience and professional knowledge gained by the officers in daily life.

Much time is spent on an officer's training. A lieutenant, for example, who has finished his training has had at least one and a half years of service as a recruit, soldier, noncommissioned officer, and officer. A militia officer, who today has attained the rank of colonel, has an average of five years of service.

On the other hand, far too short a time is given to the training of the soldier. He has a fundamental training of four months, the "recruits' training course." This is followed by eight 3-week periods of service with the unit to which he is assigned. This is called the "refresher course" and extends over 15 years. It is so arranged that at first he must do service every year, then later the intervals between service gradually increase. When he is 36 the soldier is taken from his firstline unit (elite) and put into the secondline troop (Landwehr) where again he is assigned to a certain unit, but where he must do service only occasionally. At 48 years of age he is put into the territorial troop, where he stays until he is 60.

The gaps unavoidably left by such a short training period are filled in, as far as possible, by extensive specialization and training carried on outside the services, in particular by the annual shooting

practices. Apart from this the army benefits by the high average of educational standards and the highly developed professional training of the Swiss soldier. Nevertheless, the training of particular specialists such as rangefinders for the antiaircraft units, radar men, and signalers is not quite satisfactory.

Twice, in 1914-18 and 1939-45, the Swiss Army had the opportunity to improve its training by making use of the periods of long service made necessary for the defense of the country.

#### Air Force

In the milita army the training of the air force presents several difficulties. The technical repairs and servicing of the airplanes, weapons, and signaling equipment, and the upkeep of the airfields and the air safety measures are attended to mainly by permanent officials and workers. This administration is helped by a number of regular army pilots. The actual training of the pilots is in the hands of instruction officers, who are professionals, and is accomplished in various courses of several months' duration. After finishing his preliminary training, the militia pilot is assigned to a flight. Here, under the command of his flight captain, the pilot can attend annual refresher courses and short training courses and increase his tactical knowledge. Furthermore, to keep in practice the militia pilot must fly a certain number of hours every month in the same type aircraft used in his unit.

There is a special militia troop for the service and maintenance of planes in wartime, as well as for the defense of bases. This troop is trained in the same way as the other specialized defense units. The same applies to the organization of air defense and flight command.

With the inclusion in the air force of faster and more complicated airplanes that make still higher demands on the knowledge and physical fitness of the pilot, it is debatable whether the method for training pilots described will be sufficient in the future.

#### Battle Experience

A weak spot in the training of the Swiss Army is, of course, the lack of any real battle experience. This has nothing to do with the military system, but with the position and the foreign policy of Switzerland, which has made it possible for her to keep out of wars for over 100 years.

The most important difference between a militia army on the Swiss pattern and the reserve system existing in many other states is that in Switzerland there are no regular troops and that the entire army is, nevertheless, invisibly there in battle order, and can be mobilized at once. Every officer is in command of the same troop year in and year out. Every soldier belongs to a particular unit (his unit) in which he takes part in the repetition courses. Therefore, companies, batteries, battalions, regiments, and divisions are lasting and firmly established associations. Because of this, if the command for general mobilization reaches the servicemen in the early hours of the morning, the troops can be ready for battle, on the march, or in position with all the heavy equipment, armor, ammunition, and fuel and food supplies by afternoon. Some special organizations for defense along the border can take up position in an even shorter time.

The quick mobilization of the entire army is made possible by exact preliminary organization. Thanks to the annual mobilization of nearly every troop or unit for the repetition courses, general mobilization can be practiced. This state of quick preparedness is assured further by the well-known method of giving every serviceman his personal uniform, equipment, and rifle to keep at home. Shortly after the order for general mobilization has been issued he can arrive at the meeting place and join his unit complete with uniform.

rucksack, rifle, and ammunition, and no time is lost in issuing equipment.

#### Low Cost and High Efficiency

One of the advantages of a militia army which cannot be overlooked is its comparative cheapness. Switzerland spends three percent of the annual national income on defense: this works out at 140 Swiss francs per capita. France, for example, devotes 12 percent of the national income, or 320 Swiss francs per capita to keep up her army, fleet, and air force. Switzerland maintains 12 divisions, three light brigades, an air force of 400 frontline aircraft, a border defense force, a highly modern series of fortifications, and numerous territorial troops. France, with a population 10 times as large and a military budget 20 times larger, has not more than twice the military strength of Switzerland.

To take the example of a small country: Holland spends the same amount per capita as Switzerland. But with a population twice as large as that of Switzerland, the Dutch have only five divisions, as well as other corps, amounting to three divisions. To this must be added a small fleet and air force.

Such examples can be quoted ad infinitum. They all go to show that the Swiss military system combines low cost with comparatively high efficiency. We must not, however, forget that Switzerland has no expenditures for a fleet, and that she is satisfied to have an air force which is not sufficient and does not correspond to the strength of her ground forces.

One economic advantage of the militia system is that the large mass of servicemen, who are 20 years old, are only taken out of their jobs for four months. The short periods of service later on—in peacetime—hardly make any impression on the economic life of the country. Furthermore, by holding the refresher courses at suitable times, the requirements of agricul-

ture, i

Fro land's to the suffice age of answ well-of basis.

Th

requi a lac count milit insuf of th is ce lar a regin first when

In force spot short all to part coun fens for T with

edly The lar, sat wa; diff reg

.

as

liti

lan

ture, industry, and trade can be taken into account.

#### The Answer

1958

no

itia

its

nds

in-

140

ex-

nal

to

ce.

ree

nt-

a

nd

ith

ili-

ore

rit-

у:

p-

on

he

as

ns.

nd

ni-

iss

th

ist

as

he

is

to

ia

e-

en

he

ehe

e,

t-

ıl-

From the above description of Switzerland's methods we can derive an answer to the question, whether a militia army suffices for the defense of a country in an age of the highest technical warfare. The answer is yes; it is possible to create a well-organized and equipped army on this basis.

The technical training should meet the requirements of modern battle; however, a lack of specialists must be taken into account. An air force can be built up on the militia system only in part, and then is insufficient in numbers. The general staff of the army, consisting of regular officers, is certainly as capable as that of a regular army. The leadership at battalion and regimental level would have difficulty at first, due to the lack of tactical experience, whereas the lower command would suffice.

In the actual fighting, the combined forces probably would show some weak spots at the beginning of a war due to the short service periods of the units. Taking all things into account a good militia army, particularly when fighting in well-known country and supported by a planned defense system, can be a very real defense for any country.

The combination of a good militia army with standing or regular troops undoubtedly would improve the results greatly. The question of the air force, in particular, where the militia system is not a satisfactory answer, could be solved in this way. The tank corps, which is particularly difficult to command, could be composed of regular soldiers and could be introduced as the skeleton and backbone for the militia system.

#### Requirements of Atomic War

The question as to whether the militia army in the atomic age has any particular advantage must be answered positively.

The decentralization of units, which is demanded categorically nowadays, requires an increase in mobility and strengthening of firepower. At the same time this calls for defense in depth which leads to decentralization. The necessity of a well-dispersed defense is emphasized by the possibility that parachute troops and airborne divisions may make landings anywhere and everywhere within the narrow defense terrain of Western Europe.

The opinion now held—that the decrease in the size of army units caused by introduction of tactical atomic weapons must also lead to a general decrease in the numbers of troops—probably is one of those preconceived ideas which develop before any war, and which are then paid for dearly by bitter experience or even defeat.

Today we need many more troops because every part of a country which does not possess an enormous interior must be defended. Under European conditions it is only the militia system that can produce, and keep in readiness, the large number of troops necessary for a real defense in depth. Naturally this defense is still better if the militia units of the army are supported by standing troops or regulars—including those armed with atomic weapons, where possible—or if these regulars form a first-line defense, and both are supported by the air force.

#### An Armed People

A further advantage of the militia system in modern warfare is that it produces an armed people. Enemy infiltration, betrayal, internal riots, defeatism sown by the enemy, catastrophies caused by nuclear weapons are all manifestations of modern war for which we must be just as well prepared as for waves of tanks and swarms of fighters and bombers. A people, who for the most part have gone through the school of a citizens' army, and whose members are organized in some military form or other, will know better how to resist internal dangers than a popula-

nel

fev

fan

cos

wo

eac

cou

600

Mi

ret

tha

mi I

qu

in

hi a tw

st

el

ti

fo

si

a

la

f

t

n

tion that relies on a "weapon of retaliation" possessing a war deterrent influence, or that trusts in a technical army. No matter how perfect and modern such a technical army might be, it can only defend the borders and a few of the most important interior points.

An atmosphere that serves to strengthen the state is created by the fact that a citizen is given an opportunity to prove himself a military educator and leader; people of the most various classes and professions can meet as officers and soldiers in the army; and, there is a continual and lively exchange of experiences between civil and military work. By giving the citizen his military equipment you are placing trust in him. He knows he is in it too. With the militia system there can be no

gulf between a military man and a civilian, or the army and the state. The militia army can never become a blindly obeying instrument to be used or misused. It is the army and people in one.

Peoples who are armies and armies who are peoples—that is what the free world needs in the face of the threat from Communist imperialism.

If the military leaders of Western Europe could overcome their mistrust or dislike of the militia system, a way would be open for an efficient defense of our free world. By a clever combination of regular troops for the air force, fleet, and specialized units with a modern militia army, the answer to the burning question always facing the North Atlantic Pact Organization probably could be found.

### The Division in Atomic Warfare\*

Digested by the MILITARY REVIEW from a copyrighted article by Major M. R. W. Burrows in "Revue Militaire Générale" (France) April 1957.

Tactics should determine the organization of a division. A division designed for an atomic war, therefore, should be organized to put into effect the tactics which are likely to be adopted in such a war; it need not necessarily bear much resemblance to formations used previously.

As a hobby, I play war games between different types of divisions. I have not been able to make some NATO divisions, including the British infantry and armored divisions, win their battles. I find that the infantry division is too ponderous, while the armored division is handicapped in northwest Europe by lack of infantry.

I can win atomic battles, on paper, with both the Russian mechanized division and the 1943 Panzer grenadier division, but the most successful, on a 10- to 12-mile front in northwest Europe or the Middle East, is called the light division. It has three armored regiments of about 55 tanks each and six mounted infantry battalions. Each battalion has armored personnel carriers mounting a machinegun, and the division consists basically of about 165 tanks and 336 armored personnel carriers and machineguns. There is a strict limit of 10,000 men in the division, so headquarters and other units are reduced either in size to a real minimum, or placed under command of corps headquarters.

This light division probably only wins my war games because it suits my personal conception of an atomic battle. But since the division is economical in manpower and money, I propose to explain how I would employ it and to compare its efficiency with the current British infantry division in atomic battle.

Each mounted infantry battalion is limited to 86 vehicles, including the person-

<sup>\*</sup> The views expressed by the author are his own and do not necessarily represent official opinion or policy.

nel carriers, and the light division has fewer vehicles than either the British infantry or armored division. The capital cost of 336 British personnel carriers would be about \$9,288,000; in peacetime each vehicle should last five years, so they could be depreciated at the rate of \$1,881,600 a year. The Scientific Advisor to the Minister of Defense, Sir Frederick Brundrett, speaking in London in 1955, estimated that a national serviceman costs more than \$4,200 a year to train, pay, and administer. The saving in manpower, which I propose, far exceeds the 448 men re-

1958

civil-

ilitia

ving

It is

who

orld

com-

Eu-

dis-

d be

free

ular

cial-

the

avs

ani-

has

nks

ons.

ar-

di-

nks

and

of

ar-

her

der

ins

er-

But

an-

nin

re

in-

m-

n-

## quired to pay for the personnel carriers. The Next War

It is said that the key to the future lies in the events of the past. Modern military history dates from Napoleon's time, and a study of the period from 1796 brings out two useful lessons.

The first, and perhaps rather negative, lesson is that democracies very seldom start wars, because their governments usually are more concerned about the next election and the economies in government expenditure which must be made if elections are to be won. As the preparations for a war become more and more expensive, it becomes less and less likely that any political party, dependent upon popular support, will authorize the expenditure of sufficient money to equip its armed forces for an aggressive war. This effectively reduces our potential enemies to those countries whose governments are not subject to the discipline of free elections at set periods, namely, the USSR, China, those Communist satellites which still can afford to ignore popular opinion, and perhaps certain Middle East countries with authoritarian regimes.

The second lesson, which is complementary to the first, is that wars are only started by a dictator, or a military clique, when the opportunities for territorial and economic gain are great and when it seems that limited objectives can be achieved

without danger of defeat. Napoleon, Hitler, Mussolini, the German Governments in 1866, 1870, and 1914, the Japanese Government in 1904 and 1941, and the Communists in Korea all have planned short decisive campaigns of this nature.

My conclusion is that no power is likely to provoke a global war, particularly one in which thermonuclear weapons would be used and which could result only in mutual annihilation. The next war can be visualized as starting with a quick thrust to achieve a limited aim before the democracies could intervene; perhaps the occupation of Arab oilfields, or Western Germany if allied forces had withdrawn, or Greece if she became detached from NATO.

Speed and security would be the essence of such operations. Therefore, if I were a Russian military dictator, I would not mobilize a vast army, but would attack with the minimum number of mechanized divisions needed to achieve my aim quickly, using the "blitzkrieg" tactics which proved so successful between 1939-41. I would not use thermonuclear weapons because that would invite retaliation and bring about the stalemate which must be avoided. I would rely upon liberal and "progressive" opinion in democratic countries to prevent them from using thermonuclear weapons against me. In fact, I probably would not launch my attack until I was sure that international opinion was strong enough to prevent the use of thermonuclear weapons in a limited war. In the initial stages of attack, nuclear weapons may not be used, although certainly they would be kept at hand. If atomic missiles were used, it would be only in close support of ground forces to enable the army to achieve its objectives more quickly.

My belief that the Russians would use "blitzkrieg" tactics at the outbreak of war is supported by the facts that they fought such a campaign in Manchuria in 1945 and that the Russians now deploy 22 tank and mechanized divisions but only two

rifle divisions in East Germany. This theory is, of course, contrary to the accepted belief that the Russians will use the same tactics in the next war as they used in the last war in Europe.

The democracies for their part seem almost certain to use atomic missiles in a tactical role and probably against military targets in a strategic role. It is difficult to visualize a situation in which they could halt a determined attack with conventional weapons, and it is doubtful if public opinion would agree to an army being overrun and suffering heavy casualties, if the disaster could be avoided by the use of tactical atomic missiles. If the democracies used nuclear missiles, the aggressor certainly would do likewise, but probably would still avoid the use of thermonuclear missiles for fear of bringing about a stalemate.

It is possible that the democracies would initiate a thermonuclear war, but it does not appear probable for two reasons: first, the strength of liberal and "progressive" opinion already alluded to, and, second, the greater vulnerability of cities in the United States, England, and West Germany compared with those in Russia.

#### The Defense

In a nuclear war there will be comparatively few divisions engaged, because of the difficulties of keeping them supplied with ammunition and motor fuel. Divisions will, therefore, be required to defend wide fronts of at least 10 miles. I doubt if any type division could defend such a front against a determined attack, unless it was established behind an obstacle. The defense of a division area must be based upon an obstacle and a covering force behind which the bulk of the formation is deployed and concealed from the enemy.

Broadly speaking, there are two ways of defending an obstacle: with infantry or with mobile troops. If the defense rests upon a framework of infantry battalions, as in the last war, the infantry must be dug in on good tactical features covering the approaches to "vital" ground. If the infantry is not dug in, it is vulnerable to nuclear attack; it is not dug in on ground covering enemy axes of advance, it can be ignored by the enemy.

The main disadvantage of an "infantry" defense is that these important tactical features, which battalions must hold, cannot be concealed or camouflaged, and they are obvious atomic targets. The situation may be considered from the enemy's point of view. The assault commander selects his axis of advance; tactical features covering the axis are noted on the map; reconnaissance aircraft are sent to photograph the selected features; photographic interpretation experts examine the prints and the target analysis team determines the kiloton yield necessary to destroy or neutralize the defending forces, bearing in mind the state of their defenses and the ground and the weather.

It can be argued that the infantry battalions, having prepared their positions, should withdraw to nearby hideouts, and should reoccupy their battle positions only when the enemy threatens them directly. But the infantry would have to "hide" about 2,000 yards, or a 40-minute march, away from their battle positions, and they would be most vulnerable to nuclear attack or high-explosive fire while moving to or from these positions.

A further problem arises when it is necessary to provide an infantry force to cover the obstacle. The covering force may have to be withdrawn, just before a major enemy attack, to battle positions which may be five or 10 miles away from the obstacle. The move may take two or three hours to complete and throughout this period—when nuclear attack must be expected—the covering force will be above ground, on foot, or in unarmored vehicles,

and wi

These by the in arm division lons: a tion fo

The three b Its tas about and wi pany m to cove should in batt assault In a battali

tages section be used for an receive in its through broade Second

would to car rifle conself-constant the batheat, the p

The sist moun squad be to cal a with

enem beyon and will have no protection against an atomic burst.

58

rk

r,

cto

ig if

ıy

ne

799

al

n-

y

n

nt

ts

V-

e-

ic

ts

28

r

le

t-

s,

d

y.

t-

S

r

These difficulties are overcome largely by the use of mounted infantry battalions in armored personnel carriers. The light division could be deployed in three echelons: a covering force, a counterpenetration force, and a "pivot force."

The covering force might consist of three battalions and one armored regiment. Its task would be to dominate the area about the obstacle with patrols by night and with fire by day. Each forward company might have a frontage of 2,000 yards to cover, and with its 13 machineguns it should be capable of holding local attacks in battalion strength and delaying a major assault.

In a covering force, mounted infantry battalions would have four main advantages over normal battalions. First, each section would have a radio set which could be used to report enemy movement, to call for artillery and armored support, and to receive orders (the section would not sit in its vehicle, but would communicate through its vehicle radio set, using a rebroadcast handset).

Second, the mounted infantry company would have greater firepower and be able to carry more ammunition than a normal rifle company. Third, each section could be self-contained administratively with tinned rations and a vehicle cooker. And, finally, the battalion would be able to move about the battlefield with some protection against heat, blast, and radiation, particularly if the personnel carriers were lined with a material resistant to heat and radiation.

The counterpenetration force might consist of one armored regiment and one mounted infantry battalion, deployed in squadron/company groups. Its task would be to assist the covering force to repel local attacks, and to delay a major assault with a view to causing congestion in the enemy's bridgehead and in assembly areas beyond the obstacle. Atomic missiles then

could be used to disperse any large concentrations of troops in these areas.

Finally, the "pivot force" might consist of one armored regiment and two battalions. It would be located under cover and away from likely atomic targets, so that it could move to occupy any one of two or three alternative positions covering different enemy axes of advance. Defenses and minefields would be prepared for these positions by the battalions and such engineers and pioneers as were available, but they would not be occupied until the enemy had advanced within the danger zone of an atomic missile burst over the position. At this stage the enemy could not burst a missile over the defenses without disrupting his own advance, and he would be unable to fight his way through the counterpenetration force and the defensive minefield, using conventional weapons, before the pivot force was in position and ready to receive him.

The successful employment of the pivot force depends largely upon restricting the enemy's advance to one main axis. This can be achieved best by striking at the places where the enemy tanks are trying to cross the obstacle.

"Stay-behind" patrols, radar, and night reconnaissance aircraft can be used to discover exactly where the enemy tanks are crossing as soon after an attack is launched as possible. For war games it is estimated that atomic missiles could be burst over prearranged targets four hours after the attack starts, and over "fresh" targets within eight hours. Up to this time, the aim is to restrict the movement of enemy tanks with medium artillery fire—this being their primary task during the opening stages of the defensive battle.

It might seem that it would be more profitable to use atomic missiles against concentrations of troops in assembly areas or in a bridgehead instead of against obstacle crossing places. In the initial stages of the battle, however, such areas cannot be predetermined with any accuracy and there usually is an unacceptable delay between the location of the target and the dispatch of the atomic missile.

A counterattack should be launched as soon as the movement of enemy tanks across the obstacle has been halted, and the pivot force has checked the enemy's main thrust. The troops taking part may be a part of the original covering force, or a battle group from the pivot force, or a light division in corps reserve. An atomic target should be prearranged in front of each pivot force position to provide the basis of the fire plan which should be fired quickly enough to strike the enemy before he has time to dig in.

The particular virtues of the light division in the defensive battle are that it can be well-dispersed before the battle starts and, therefore, offers no worthwhile atomic targets to the enemy. The entire division can be maneuvered quickly to bring all its weapons to bear upon the enemy. By contrast, normal infantry battalions are tied to dug in positions on important, and therefore obvious, tactical features. They lack the scale of transport and the radio communications within companies which are needed by a covering force and during mobile operations with armor. There seems a real danger that the defense of an infantry division's area could be disrupted by the quick neutralization of two or three battalions and that subsequent operations would be handicapped by the dispersion of armor in support of isolated battalions.

#### The Attack

A conventional formation attack by infantry depends largely upon an artillery fire plan for success. Usually it is necessary to fire a considerable number of shells to achieve any worthwhile penetration, because the infantry seldom can cover more than 100 yards in three or four minutes. Thus an advance of 2,000 yards will take about an hour and may require 120 rounds a gun to support it.

In the future it will be difficult to assemble enough guns or ammunition to support anything bigger than a battalion attack, because any large concentration of guns will present an atomic target to the enemy and the supply of ammunition will be at the mercy of the enemy's interdiction program. On the other hand, the deployment of a guided missile unit or 280-mm battery can be concealed easily from the enemy, and the supply of a few atomic missiles can be ensured by the use of aircraft and helicopters. It can be concluded that any major attack will have to rely mainly upon atomic artillery support.

The characteristics of an atomic burst are such that it must be followed up quickly if the maximum benefit is to be gained. The minimum distance from a jumpoff line to the ground zero of the smallest atomic shell is likely to be 1,500 to 2,000 yards because of the safety factor. Dismounted infantry will take 45 to 80 minutes to advance this distance and there will be little chance of them overcoming the "crust" before a determined enemy has recovered his fighting efficiency.

On the other hand, infantry in armored personnel carriers could safely form up closer to the ground zero than could unprotected infantry on foot, and they would have a better chance of overrunning the enemy before he could recover.

So much for the simple attack, or counterattack, against relatively unprepared positions. The situation is considerably more complicated when the enemy is deployed behind an obstacle, as will be the case normally.

The World War II pattern of an infantry assault, followed by the consolidation of a close bridgehead, the buildup of armor, and then the breakout, will be a hazardous operation in a nuclear war. The enemy almost certainly will have prearranged atomic direction-finding targets on likely crossing places, and it must be as-

sume bridg a few It flow

miles
pause
to cle
area
with
not l
curre
cross

Is

to li

a brifor the ford one acro ford equi shou deer four rive

rive rive Si span The arm fant in 9

nort

year

able tan a d mov

pos uni bui at mo sumed that atomic shells will be fired at bridging sites and bridgehead areas within a few hours of the launching of an assault.

It is essential that the attack should flow over the obstacle and penetrate some miles into enemy territory, without any pause for consolidation. The aim should be to clear all infantry and engineers from an area 2,000 yards around the bridging sites within four hours of the assault. This cannot be done by an infantry division using current engineer equipment for river crossings.

I suggest that the solution would appear to lie in the ford-laying tank. This is like a bridge-laying tank, but has broad tracks for traversing mud, and a snorkel device; the driver has frogman's equipment. The ford-laying tanks are driven into the river one after the other and placed end to end across the river, providing an artificial ford under the river's surface. Using this equipment, tanks and personnel carriers should be able to cross rivers up to 11 feet deep, and with a current not exceeding four knots. This is sufficient to cross any river in England, and most rivers in northwest Europe, at most times of the year and at a reasonable distance from the river mouth. Careful reconnaissance of river beds will be required.

Six ford-laying tanks should be able to span a 100-yard-wide river in 30 minutes. Thereafter, the forward echelons of an armored regiment and two mounted infantry battalions should be able to cross in 90 minutes.

Providing that adequate support is available and there are enough ford-laying tanks to provide four crossing places on a divisional front, it should be possible to move a light division across a river and to penetrate some miles into the enemy's position within four hours. Even if some units were caught by an enemy atomic burst while crossing the river, they would at least have the protection of their armored vehicles, and the ford could be dam-

aged only by a "water-burst" atomic missile.

By contrast, four hours after an assault, an infantry division using normal engineer equipment might expect to have four battalions and two squadrons of tanks across the river, and a large number of engineers working along the riverline. The infantry would be unable to advance far from the riverline because of the lack of armored support, while the reserve battalions would be moving up to the river on foot or in unarmored troop-carrying vehicles. The division would be unpleasantly vulnerable to enemy atomic fire.

The crossing of a minefield presents fewer technical difficulties because flails and other apparatus already have been developed to create breaches for armor, but the same general principles apply and the aim must be to clear all troops from the crossing places within four hours of the start of the assault.

Administrative matters will be considered later, but it would be particularly useful if assault divisions could rely upon helicopters for support during this type operation. They then would have nothing to fear if the ford sites were attacked with atomic missiles after the assault echelons had crossed. A light division could fight on 600 tons a day and this amount could be carried in 40 helicopters, if each aircraft carried five tons and flew three sorties a day; gasoline and ammunition could be delivered direct to unit supply centers and to gun positions.

#### **Conventional Artillery**

The effectiveness of conventional artillery will be reduced by the difficulties of maintaining supplies of ammunition on the scale to which we have become accustomed during the last two World Wars and in Korea. No satisfactory solution has yet been found to the problem of providing overhead cover for guns which must cover a wide arc of fire. The concentra-

mic airded rely

1958

as-

sup-

at-

of

the

will

dic-

de-

280-

rom

t. irst up be

500 tor. 80 ere

the

my red up un-

ing

inred

de-

he

uld

on ara

on astion of any large number of guns is likely to prove ineffective, because it will invite atomic attack by the enemy.

The infantry of the light division will enjoy the close support of a large number of tank guns. Each company has 13 machineguns in its personnel carriers so the scale of artillery close support fire for the infantry can be reduced. In defense the primary tasks of the artillery will be the separation of the enemy's infantry and tanks, by the bombardment of tank obstacle crossing places, until atomic missiles can be brought to bear on them. In attack the artillery will be required to supplement atomic bursts by neutralizing crust positions until they are overrun, and subsequently to support the exploitation beyond ground zero with observed fire.

For these tasks the light division is allotted one medium regiment and two field regiments. Each regiment will have three batteries, but in view of the manpower limitations in the division each battery will have only six guns. When financial resources allow, field artillery units should be reequipped with guns capable of firing twice as fast as at present so that batteries could be reduced to four guns each without any loss of firepower in the division. All new guns should be self-propelled and provided with overhead cover to protect the detachments against the effects of heat, blast, and radiation.

I have discarded all infantry and artillery mortars from the division, because the range of British mortars is short and they require too many men and vehicles to service them. Instead, I have included a battery of eight rocket launchers. The latest American equipment fires the equivalent of 25 x 4.2-inch mortar bombs accurately to a range of five and one-half miles and it can be reloaded in two minutes. Therefore, eight rocket launchers could produce as much fire on the front of the division as an artillery mortar regiment and nine infantry mortar platoons,

with about one-eighth the number of men and vehicles.

The infantry division's locating battery is replaced by a troop of four field radar sets in each regiment. These can be used either for the location of enemy mortars or the detection of vehicle movement. In the latter role the radar sets may be of decisive importance in an atomic battle because they can, under suitable conditions, locate accurately the assembly of enemy vehicles or the exact points at which an obstacle is being breached.

Since I can visualize few targets which would require light antiaircraft defense and which are not likely to be attacked by atomic missiles, I also have discarded the light antiaircraft regiment. Light antiaircraft guns cannot be provided with overhead cover and to deploy them in the area of a likely atomic target seems a waste of trained manpower and expensive equipment. I prefer to dispense with the light antiaircraft unit before the war starts, and to rely upon dispersion, concealment, and machineguns for protection against low-flying enemy aircraft.

#### Engineers

The importance of engineers will be much enhanced in a nuclear war.

In defense the importance of an effective obstacle already has been stressed and the engineers also may be required to assist in the preparation of alternative positions for the pivot force. In the advance and the attack, particularly across an obstacle, the success of the operation may depend very largely upon the skill and the equipment of the engineers.

It might be desirable to have two engineer regiments in the division, but owing to manpower restrictions I have included only one regiment of four squadrons; two field squadrons, one squadron of bridge-and ford-laying tanks, and one squadron of flails and mechanical minelayers.

sion a roads moven roads he as made vision plies mules of gu of tar of cro dition and t based fantr

In r

vehic For infant ions, regin still from liver trans

> work thea Su equij and Burn ploy

> > with

four

ther 36 g with terr mor tion be

tere

tica

#### Specialized Operations

1958

nen

ery

lar

sed

ars

In

de-

be-

ns,

my

an

ich

ise

by

he

ir-

er-

ste

ip-

ht

ts,

nt,

ist

be

ec-

ed

to

ve

d-

SS

on

nd

i-

ıg

ьed

VO

e-

n

In mountains and in the jungle a division always is handicapped by the lack of roads and the difficulty of cross-country movement. In a nuclear war the lack of roads will be aggravated because it must he assumed that any main road will be made unusable by atomic missiles. A division may have to rely entirely upon supplies dropped by aircraft-or carried by mules. There will be a chronic shortage of gun ammunition and the effectiveness of tanks will be limited by the difficulties of cross-country movements. In these conditions the light division will be ineffective and the divisional organization must be based upon the maximum number of infantrymen and the minimum number of vehicles.

For these operations I would employ an infantry division of nine infantry battalions, one armored regiment, one artillery regiment, and one engineer regiment. I still would exclude all administrative units from the division because aircraft can deliver direct to areas within reach of unit transport.

The infantry battalions must include four strong rifle companies; therefore, manpower will have to do much of the work accomplished by firepower in other theaters of war.

Supporting arms must be limited to such equipment as can be employed usefully and kept supplied with ammunition. In Burma, in the last war, we frequently deployed more guns than could be supplied with ammunition. The division artillery, therefore, is reduced to one regiment of 36 guns. The regiment should be equipped with the most suitable weapon for the terrain which might vary from heavy mortars to medium guns or a combination of guns and mortars. Batteries may be trained to use alternative equipment and the composition of the regiment altered, from time to time, to suit the tactical situation. Similarly, the division is allotted only one armored regiment because it seems unlikely that more could be maintained.

Troops engaged on airborne, helicopterborne, and amphibious operations, which must include the crossing of major riverlines, will suffer from the same difficulties over maintenance and, therefore, the same basic organization should fulfill their requirements.

Cities are obvious atomic targets and operations in them should be avoided whenever possible. Attacks on strongly defended towns-such as Caen, Cassino, and Stalingrad—have almost always proved costly. It would seem more profitable in the future to neutralize the defenders with atomic missiles, and to construct a new route around a city, instead of trying to clear a way through the ruins. In defense it normally will be preferable to crater a build-up area and treat it as an obstacle to the enemy, but there may be occasions when a city must be held. For this task an infantry division, organized as above, will be more suitable than a light division.

This division also will be suitably organized for operations against enemy guerrilla forces and for civil defense work. Therefore, I would recommend that the bulk of the Territorial Army be organized on these lines, so that they may be available at the outbreak of war for civil defense tasks in the United Kingdom, and subsequently for specialized forms of warfare overseas.

This infantry division also should be restricted to a total strength of 10,000 men, of which about 7,000 should be in the infantry battalions. (See chart.)

#### Manpower

I believe that, if there was not overfull employment in Britain, an army of 200,000 to 220,000 regular officers and men could be maintained and could be trained, equipped, and organized into effective divisions of 10,000 men.

that t

initial

be bas

fantr porta featu: areas muni cover with ible a trate from In hand tion, able fully cross tated whic fant beyo miss T mun divi Nev fire shor

Wa

thr

the

fen

cor

im

fac

pr

as

ve

The

In peacetime these divisions could train on an establishment of 8,000 men, and I suggest that they should be deployed as follows:

In Germany: Four light divisions.

These divisions would absorb 80,000 men, leaving 120,000 to 140,000 for headquarters, army and corps troops, the training organization, schools, and depots. This number should suffice, if the best use is

PROPOSED ORGANIZATION OF A LIGHT DIVISION  1. Headquarters	N Manpower
Command post, administrative planning staff, atomic target analysis team, headquarters of artillery, engineers, and signals.	500
2. One Armored Brigade Three armored regiments of about 55 tanks each.	2,000
3. Two Mounted Infantry Brigades	2,000
Each brigade has three mounted infantry battalions. Each battalion has four companies, each of which is carried in 13 personnel carriers (each brigade 2,200). A personnel carrier can carry 10 men, including a commander, a driver/radio operator and a machinegunner/radio operator. A battalion is restricted to 86 vehicles, including 54 personnel carriers, five ammunition trucks, and five gasoline trucks.	4,400
4. Artillery	
One medium and two field regiments, each of 18 guns. Each regiment also includes a troop of four field radar sets. One rocket launcher battery with eight launchers. One air observation post flight of six light aircraft or helicopters.	1,900
5. Engineers	
One regiment of four squadrons: two field squadrons, one squadron of bridge- and ford-laying tanks, and one squadron of Armored Vehicle, Royal Engineers (AVRE's), flails, and minelayers.	900
6. The Royal Army Service Corps (RASC)	150
One distribution company to man distribution points for ammunition, gasoline, food, and other supplies.	
7. Royal Electrical and Mechanical Engineers (REME)	
One recovery company.	150
Total	10,000

In the Mediterranean area: Two light divisions.

In Africa, Malaya, and the Far East: The equivalent of one infantry division, to supplement local forces.

In the United Kingdom: Two light divisions for service in Europe in a major war. One infantry division (air transportable) for Imperial police duties.

made of civilian labor, older soldiers, and business methods of office organization and administration.

#### Conclusions

The next war is likely to start with a quick thrust by mechanized forces to seize limited objectives before the democracies can intervene effectively. Atomic missiles are likely to be used, but it is improbable

that thermonuclear missiles will be used initially.

1958

men,

uar-

ning

This

e is

r

ind

nd

ize

ies

les

ble

The defense of a divisional area should be based upon an obstacle. In defense, infantry battalions are forced to hold important, and therefore obvious, tactical features which are likely atomic target areas. Infantry battalions lack the communications and transport required by a covering force and for mobile operations with armor. The light division is more flexible and maneuverable; it can be concentrated quickly against enemy penetrations from well-dispersed areas.

In attack the infantry division will be handicapped by lack of artillery ammunition, and infantrymen on foot will be unable to advance quickly enough to exploit fully the effects of an atomic burst. The crossing of water obstacles will be facilitated by the provision of ford-laying tanks which will enable tanks and mounted infantry to cross quickly and advance well beyond the obstacle, before enemy atomic missiles are burst over the crossing places.

There will be a shortage of artillery ammunition, so the number of guns in the division should be reduced proportionately. New guns should have a quicker rate of fire to save manpower and vehicles, and should be on a self-propelled chassis with

overhead cover to protect detachments against heat, blast, and radiation.

Administrative economy and increased flexibility can be achieved by providing each corps with an air supply unit. This will allow all administrative units to be removed from the division and placed under command of the corps headquarters. Division headquarters then can be reduced in size.

In an atomic war, divisions engaged in jungle and mountain warfare, and in amphibious and airborne operations, are likely to suffer more severely from shortages of supplies than in the past. Divisions should, therefore, consist of nine infantry battalions, and only one artillery regiment, one armored regiment, and one engineer regiment. Such divisions also would be suitable for operations in cities, against enemy guerrillas, for Imperial police duties, and civil defense work.

Both the light division and the infantry division, designed for specialized forms of warfare, should be restricted to 10,000 men. In peacetime these divisions should be limited to 8,000 men, so that conscription could be abolished to the benefit of the army, the country's economy, and the individual.

### Antitank Defense

Translated and digested by the MILITARY REVIEW from an article by H.-J. v. Hopfigarten in "Wehrkunde" (Germany) July 1957.

TROOPS of the Entente tried in World War I, more or less successfully, to break through the frozen Western Front with the help of tanks. Since then antitank defense played an important part in ground combat. Today, armor has reached a maximum of effectiveness as determined by factors like the power weight ratio and practical height and weight of the tank, as well as the demand for a high maneuverability.

The technical, as well as theoreticaltactical, aspects of the antitank defense problems are, or shortly will be, solved. Unsolved however, as is usual with tactical theories, is the practical application of the antitank defense under battlefield conditions.

Among the important factors which influence success or failure of the antitank defense are visibility, topography, the number of enemy tanks, their tactics, and

the effectiveness of enemy fire against our own antitank defenses.

The problem of antitank defense, therefore, must be considered in the light of these factors. In any case, it would be extremely disadvantageous to view the situation from the angle of special weapons, or as a result of experimental fire on armored plates.

#### **Basic Principles**

Antitank defense is not alone the task of antitank units. If such were the case, this unit often would miss a chance of combat action during the rapid changes of battle situations. All troops engaged in combat have to be ready for a mission of this type whenever it is required.

The possibility of enemy employment of tanks in a battle always is present. This fact has to be taken into consideration by the leaders of units at all levels in adjudging a situation.

It will be necessary, therefore, for every commander to observe the following measures:

The choice of area with regard to antitank defense.

Surveillance and warning services against enemy tanks.

Regulation of the common action of different antitank weapons with regard to the employment of troops.

Orders for self-protection of the troops by close combat against tanks and passive protective measures.

#### Definitions

Antitank defense has many aspects. It includes all measures of active antitank combat and passive protection against tanks. There are differences, however, according to the weapons employed, the means, and the troops.

Active antitank combat is the task of antitank weapons and of close combat antitank weapons and means. Weapons may be employed from the air as well as from the ground. Passive protective measures are used to protect troops from surprise by enemy tanks or from their fire.

Among the antitank defense weapons are guns, launchers, and mines, as well as plane armament including guns, machineguns, rockets, and bombs.

Light and heavy guns use armor-piercing and hollow charge shells. They may have mobility for their purpose by being mounted on tanks or self-propelled carriages, or they may be mobile only within certain limits as towed weapons. They are characterized by great length of the shell, range, and high muzzle velocity or by recoilless guns with shorter range and lower muzzle velocity.

Remote controlled missiles have a range of 400 to 3,000 yards. Weapons under technical development in France are the SS-10 and 11.

Missiles equipped with target-seeking guidance systems are among the equipment of modern fighter and fighter-bomber planes which also can attack tanks with their normal armament. Napalm and explosive bombs are effective against tanks because of their heat and explosive effects. Atomic explosions add pressure waves and radioactivity.

Close combat antitank weapons were used successfully in World War II on both sides. The Panzerfaust, rifle grenade, and bazooka are examples of these weapons. Their range is relatively short compared with the range of modern antitank weapons, and their effectiveness is based largely upon the hollow charge principle. They have the advantage of easy transportation, camouflage, and operation by one or two men. Because of their short range, however, they are employed mainly for selfprotection against tanks in the action of the unit or company. Therefore, they will be considered by the tactical commander only in special cases such as in combat action in settlements, in woods, or at night.

Among other close combat antitank

flares explothems The is the enem

weap

or su
heigh
striki
a pro
each
comb
differ
migh
to in

It man the mea tank

> w T incliboth its fros

son

m

diff are in c are wo

lar the Th weapons are tank mines, magnetic charges, flares, Molotov cocktails, and improvised explosive weapons made by the soldiers themselves.

1958

rise !

ons

l as

ine-

erc-

nay

eing

ear-

hin

are

iell.

re-

wer

nge

ch-

-10

ing

ip-

ber

ith

ex-

iks

ts.

nd

ere

th

nd

ns.

ed

p-

ly

ey

n,

NO

Ŵ-

f-

of

ill

er

at

at

ık

The combat range of an antitank weapon is the range at which it can destroy the enemy tank. Factors upon which failure or success depend are the hit probability, height of flight path, muzzle velocity, striking angle, and penetrating power of a projectile. According to the influence of each one of these different factors the combat range for each weapon changes for different tank types. The effect, therefore, might be just sufficient to reduce a tank to immobility, or great enough to destroy the enemy tank completely.

#### Antitank Defense Plan

It is the mission of the tactical commander to coordinate all the weapons of the active and passive antitank defense measure. This is the purpose of the antitank defense plan. It comprises:

The tank warning service.

The proper use of the ground for protection against enemy tanks.

Construction of artificial or reinforcement of natural obstacles.

Efficient employment of all antitank weapons.

The plan for the defense of an area must include the antitank defense plan, but both plans judge the ground according to its influence on tank movements. Long frost spells or dry spells must be considered also, since they may reduce or change some of the factors.

Ground conditions may be considered difficult if enemy tanks need special preparations or the employment of special help in order to move successfully. Among these are prepared bridges, demolitions, earthworks, and continuous fire. Unfavorable ground may permit the movement of tanks in general. It impedes the employment of larger tank units, however, and leads those units to concentrate in small areas. This makes the employment of antitank

weapons easier. Areas covered with thick forests, and cultivated or broken country offer these conditions, particularly since they present only a limited field of fire to enemy tanks.

An important part of the antitank defense plan is played by the tank warning service. Successful employment of antitank weapons and timely preparation of passive protective measures depend upon the early reports of the observation and warning services. These services will use observation planes and ground observation, including the observation posts of all weapons, as well as outposts.

Warning reports should have preference over other reports or be sent on a separate radio channel. Smoke signals and the firing of signal flares also serve as an additional fast warning of the approach of enemy tanks.

In addition to the armor attack warning system, tank recognition is vitally necessary. Crews of antitank weapons and aerial observers must be well-trained on this subject. Recognition of friendly or enemy tanks often is exceedingly difficult in mobile warfare or night combat.

#### Active Antitank Defense

The basic task of all antitank weapons is to destroy enemy tanks. But this task is accomplished effectively only when the defending troops are protected against the fire of enemy tanks. It is obvious that a modern tank has the advantage of range for its fire over most of the targets. In good tank country this range often exceeds that of ground antitank weapons.

The problem then is that of protecting the defense troops by use of the maximum range of the antitank weapons, and at the same time to avoid providing enemy tanks with easily recognizable targets. A further complicating fact is found in the comparatively greater effectiveness of tank-fired high explosive and armor-piercing shells upon the weakly armored defense weapons. This vastly increases the necessity for

mobile or surprise employment of defensive armor-piercing weapons.

Active antitank defense should never be considered only from the angle of a linear defense. In mobile warfare the surprise appearance of tanks from different directions always is possible. The necessary preparations for a strong all-around defense cannot always be completed in time.

In addition, any antitank defense plan probably will be ruptured at least partially in mobile warfare. These difficulties increase the importance of careful planning in the active antitank defense.

Tactical atomic weapons are decisively important in the antitank defense. The possibility of using these weapons in an antitank role, however, will require prompt recognition of the target and quick employment of an atomic shell. Rapid dispersal undoubtedly will be a standard practice in all tank units.

#### Tanks in Antitank Role

The tank battalion of an infantry division often is used in an antitank role, and may be employed as a single unit, by companies, or even by platoons. In the defense of an elongated front, the division commander may assign various elements of the tank battalion to infantry frontline battalions. On the move, he may disperse it throughout the march column; it may even be used in its entirety in an antitank role against an enemy tank attack.

To facilitate the use of tanks in the antitank action, it is essential that they be integrated into the over-all antitank plan. Although sometimes assigned antitank missions by companies, often it is more feasible to assign such tasks to individual platoons. The platoon commander is responsible for maintaining communications with the infantry unit he is supporting. He must know their mission, their battle order, and their wishes with regard to antitank defense. He also must know

their antitank plans for organic weapons, the location of their tank obstacles and minefields, and must assure that his unit is integrated into their tank attack warning service.

The antitank fire of a tank battalion and of all other antitank weapons must be controlled closely. It is necessary to open fire as soon as the enemy tanks are within the extreme range of the antitank weapons if a great number of tanks are involved in the attack. If only a few enemy tanks are discovered, it usually is better to wait until they are much closer to take advantage of surprise and the increased accuracy that can be expected at shorter ranges.

#### Other Weapons

Artillery, antiaircraft, engineer, and infantry units are quite capable of a successful antitank defense. Their arms, however, seldom are of the same range as the weapons of attacking tanks. They will, therefore, fight tanks mainly in self-defense, but this fact does not prevent their participation in an antitank defense plan.

It is vitally necessary that artillery be able to engage in antitank action without being forced to change position. Gun positions have to be built in such a way that it is possible to engage attacking tanks with direct fire. Other means are fire concentrations or a fire barrage. Artillery is quite able to prevent or disrupt tank concentrations with armor-piercing fire, and to separate the accompanying infantry from the tanks by overhead bursts. It also is capable of blinding the enemy armored vehicles with smoke.

Antiaircraft artillery employs the same principles as the field artillery with regard to choice and construction of firing positions. The small caliber of antiaircraft shells, however, will force it to concentrate fire upon the running gear and optical system of attacking tanks.

Engineer units participate by the construction of barriers and by appropriate struct consurole m advan their activieffectiplann

demol

close self-pr tank in the

The erable self-pp ployed tanks, princibat w tects fire, a atomic

The protect weapor only antital measure terraining sy

missil p 72, able I the in demar agains sitions vious

easily in mo able p a sur demolitions and minefields. Since the construction of camouflaged minefields is time consuming, the use of engineers in this role must be weighed carefully against the advantages which might accrue through their use in other missions. The antitank activities of the engineers are particularly effective in a prepared defense or in a planned retreat.

358

18,

nd nit

n-

nd

be

en

in

p-

n-

ny

er

ke

ed

er

in-

ıc-

W-

he

ill,

le-

eir

an.

be

out

-00

nat

ks

n-

is

n-

nd

ry

lso

ed

me

rd

si-

aft

ate

ysonate The engineers are well-equipped with close combat antitank weapons for their self-protection. These, as well as the antitank mine barrier plan, must be included in the unit antitank defense plan.

The infantry is equipped with a considerable number of antitank weapons for self-protection. These weapons are employed mainly as local protection against tanks, for it must be remembered that the principal mission of the infantry is combat with the enemy infantry. Also, it protects itself constantly against artillery fire, air raids, and the effects of tactical atomic weapons.

These tasks underline the importance of protecting the infantry through other weapons. This protection can be assured only by antitank units with long-range antitank weapons or tanks, and by tactical measures involving advantageous use of terrain and an effective tank attack warning system.

The development of the wire-controlled missiles (SS-10 and SS-11, MR, Oct 1956, p 72, and Dec 1957, p 70) offers considerable hope for an increased protection of the infantry. These weapons fulfill a basic demand of antitank defense—early attack against tanks from the most advanced positions without offering the enemy an obvious target. This demand will be met most easily in the defense. It is more difficult in mobile warfare, however, to find suitable positions quickly for action against a surprise attack by enemy tanks. The

employment of helicopters in an antitank role may be the answer to this problem.

#### High Echelons

Even at the higher levels of command, some consideration must be given to antitank action. So far as the general mission and orders permit, the commander certainly should use terrain which best facilitates antitank operations.

He should place his frontline along terrain features that least favor the movement of tanks. During the attack he also should try to assure that open flanks are located on this same type of terrain.

In addition to the tank attack warning system, all installations from the frontline to the rear area of the combat zone must take all possible passive antitank measures, especially to include camouflage and concealment. However, these are successful only when executed well in advance. In some combat situations this will not always be possible.

#### Summary

This discussion has been confined to the concept and the principles of antitank defense, without going into the detail of antitank actions of the different weapons. However, it should be noted that only such basic knowledge will permit the leader to employ the different weapons at his disposal properly.

Even in an atomic war there always will be the danger and menace of enemy tanks. Antitank defense will, therefore, continue to play an important role in the tactics of the ground forces. The fighting soldier has many useful antitank weapons. The weapons become useless, however, if not employed in an organized and effective manner against the enemy tanks. Only then will the Panzerschreck (tank fright) lose its demoralizing effect and the enemy tank its destructive effectiveness.

## BOOKS OF INTEREST

BULGARIA. East-Central Europe Under the Communists. Mid-European Studies Center Series. Edited By L. A. D. Dellin. 457 Pages. Frederick A. Praeger, Inc., New York. \$8.50.

BY LT COL HOWARD L. FELCHLIN, Inf

Communist controlled Bulgaria occupies a strategic position of vital importance in the Soviet dominated areas of Eastern Europe. In spite of some 70 years of independent life, Bulgaria, after World War II, was transformed rapidly into the most Sovietized country of the satellite nations.

This excellent book, which was prepared by a group of specialists in Bulgarian affairs, presents a comprehensive picture of Bulgaria's history, economy, and culture which fills an unmistakable void in western knowledge of this vital country. Although faced with a scarcity of reliable source material, the authors have succeeded in developing an objective, factual analysis that offers much insight into current conditions in Bulgaria.

Prefaced by a historical introduction, the 19 chapters are divided into four parts that cover in detail Bulgaria's geography and people, governmental organization, social aspects, and economic structure. It is pertinent to note that the authors have made it a point to indicate the differences and similarities between Bulgaria and the other countries of Eastern Europe.

For a proper appreciation of this unique Communist country and its role in European affairs, the military reader will find Bulgaria an invaluable reference. PANMUNJOM. By William H. Vatcher, Jr., 315 Pages. Frederick A. Praeger, Inc., New York. \$4.75.

BY FREDERICK A. SMITH, JR., Inf

Panmunjom is an on-the-scene report of the Korean Military Armistice Negotiations by a member of the US negotiating team. This is an account of the countless strategies, perfidies, and shenanigans resorted to by the Communists in their efforts to utilize the Korean cease-fire talks for propaganda purposes.

The struggle of the United Nations delegates to arrange an honorable peace in the face of this Chinese-North Korean opposition is pointed out clearly. For this reason the book has great value for those who may face future conference table encounters with the Communists, be they members of the armed services or political scientists.

Professor Vatcher is a member of the political science faculty at San Jose State College in California. He has labored with great intensity and devotion in presenting the trying experiences that he witnessed and experienced during the course of his two years at Panmunjom. High points of the give-and-take at the conference table make interesting reading.

There are six appendices which include a statistical summary, a day-by-day chronology of the negotiations, and a copy of the final agreement.

The book stands as a well-documented and definitive treatment of the negotiations that ended the Korean war. IMRE fense 306 Pa York. By I

Imre best r

mier-o of the a Com entirel ings a onstra world

> Nag many naïvel and t closin ing m up "n Reple level

THE
By Fe
ical I

ing p

The revolute to ide the seffort politilem polititechn

In lution action at vinfor he revolution

IMRE NAGY ON COMMUNISM. In Defense of the New Course. By Imre Nagy. 396 Pages. Frederick A. Praeger, Inc., New York. \$5.50.

BY LT COL MITCHEL GOLDENTHAL, CE

Imre Nagy, a veteran Communist, is best remembered as the Hungarian Premier-of-a-week in the flaming October days of the 1956 revolt. This book, written by a Communist for Communists, gives an entirely new insight into the inner workings and problems of communism. It demonstrates vividly that in the Communist world there is no room for freedom, no escape from the claws of oppression.

Jr.,

lew

ort

tia-

ing

ess

re-

ef-

lks

lel-

in

op-

his

ose

en-

ney

cal

the

ate

ith

ng

sed

his

of

ble

ide

ro-

of

ed

ia-

Nagy surprisingly remains oblivious to many contradictions in his own thesis. He naïvely ignores his own political disgrace and the success of his opponents while closing his eyes to the paradox of accepting much support from Moscow to build up "national" communism in Budapest. Replete with intimate accounts of top-level discussions, this book is a fascinating picture but a crushing indictment of a Soviet satellite.

THE SEIZURE OF POLITICAL POWER. By Feliks Gross. 398 Pages. The Philosophical Library. Inc., New York. \$6.00.

By Maj Harry H. Jackson, Inf

This is a book about revolutions and revolutionists. Sociologist Gross attempts to identify significant patterns present in the social actions that are associated with efforts to achieve a violent transfer of political power. The approach to the problem taken by Professor Gross is sociopolitical as he discusses the tactics and techniques of revolution.

In discussing the variations on a revolutionary theme he uses the philosophy and actions of the Russian and Polish efforts at violent change as the primary vehicle for his study. He develops the patterns of revolutionary organization that were peculiar to the Poles and Russians. In ad-

dition, he describes the personality types that tended to be identified with violence and the revolutionary act, and discusses the need for the revolutionary effort to be pushed to a successful conclusion by some outside catalyst.

Dr. Gross' discussion of the anatomy of terror as a revolutionary weapon is very informative. He also examines the moral and ideological degeneration that plagues the revolutionary movement, and describes the peculiar demands of revolutionary leadership and the "jungle" aspects of the underground society.

Of interest to the military reader, this book is particularly worthwhile to those concerned with unconventional warfare as well as those interested in the revolutionary patterns of the Polish and Russian populations.

BASIC TRAINING GUIDE. Fourth Edition. 228 Pages. The Military Service Publishing Co., Harrisburg, Pa. \$3.50.

BY LT COL ROBERT M. WALKER, Arty

Here is a book that fills a vital place in the military library. It is dedicated to keeping the military individual up to date on the basic and fundamental information that each should know, but which is all too often lost in the shuffle of day-to-day activities.

A great deal of the material it contains is in the form of questions and answers. Each subject requiring the mastery of related skills has been dealt with both from the aspect of the information concerning the subject and from the viewpoint of the execution or inspection of skills. Especially interesting is the elaborate consideration given to training and proficiency tests.

This book will be useful to the man entering the service, and the instructor also will welcome this complete compilation of information on basic subjects. GRANT AND LEE. A Study in Personality and Generalship (Civil War Centennial Series). By Major General J. F. C. Fuller. 323 Pages. Indiana University Press, Bloomington, Ind. \$5.00.

BY MAJ RAYMOND O. MILLER, Inf

General Fuller's Civil War Centennial Edition of his analysis and comparison of the personality, leadership, and generalship of Grant and Lee is as readable, instructive, stimulating, and—to some—controversial as when first published 25 years ago. Only a short foreword was required to place it in the proper light for study in the present atomic-missile era.

Regarding the rifle bullet, a product of mid-19th century technology, the author says, "Neither of them [Grant and Lee] understood the tactics of the bullet, or its influence upon tactical conceptions, morale, and tactical organization." This statement of a shortcoming common to these two great soldiers of the past should be an admonition to our present-day soldiers lest a similar charge be levied against them for failure to recognize the impact of modern technology on the battlefield.

General Fuller properly regards his book—so far as military students are concerned—as "an introduction, based on facts, to a more extended study which is to be found in no single book."

He explains the "enigma" of the simple Grant—whose "story is as amazing as Napoleon's and as startling as Lenin's"—and lays open the "legend" of the saintly Lee—whose hold on men was so great that Grant was led to say, "All the people except a few political leaders in the South will accept whatever he does as right and will be guided to a great extent by his example."

A retired British Army officer, and a military writer and war correspondent of international renown, the author is considered by many to be the father of modern armored doctrine. THE BACKGROUND OF NAPOLEONIC WARFARE. By Robert S. Quimbly. 385 Pages. Columbia University Press, New York. \$6.75.

BY MAJ RICHARD L. WEST, CE

From the end of the reign of Louis XIV until the Grand Army of Napoleon became the scourge of Europe, the history of French arms was far from brilliant. Except for some noted victories under the leadership of Saxe (during the War of the Austrian Succession), France suffered a series of humiliating defeats. These defeats themselves, however, stimulated military thinking which led to the important technical and tactical developments demonstrated by the Napoleonic Army.

The author traces the evolution of French military thought through the 18th century. He analyzes the writings of those military philosophers who influenced tactical thinking.

Among the important contributors of the period were Folard, Saxe, Mesnil-Durand, Guibert, Bourcet, Joly de Maizeroy, Pirch, and Du Tiel. Of these, Guibert stands out above the others in his awareness of the value of speed and flexibility of maneuver and the need for coordinated employment of the various arms.

A bitter controversy developed during the period between the exponents of formation in depth (with primary dependence on shock action) and the supporters of formation in line (with primary emphasis on firepower).

The final result was a compromise which was incorporated into the Ordinance of 1791. This ordinance was patterned on Guibert's ideas, and it remained the basic French drill until 1831. It acknowledged the domination of the battlefield by firepower, modernized battalion tactics, and established a basis for using divisions.

The book should be of considerable interest to the military reader and is a valuable addition to the military bookshelf.

MAN U Aviation Pages. Washin

By L

The of cles (1907-1 vividly of the neers. present men withrow Militauthen tograp publis!

THE Hechle New

Sho

ical r

every

small engin 9th A dendo the I victor Mars Commies

soldie and broug sand

the dest

sum of t MAN UNAFRAID. The Miracle of Military Aviation. By Stephan F. Tillman. 228 Pages. Army Times Publishing Company, Washington, D. C. \$4.00.

358

IC

85

w

V

e-

y

t.

ne

of

d

9.

it

1-

f

h

e

f

.

t

BY LT COL MITCHEL GOLDENTHAL, CE

The author has done a remarkable job of clearly portraying the early days (1907-16) of Army aviation. The reader vividly relives the trials and tribulations of the courageous military aviation pioneers. Much interesting information is presented about the personalities of the men who were "foolhardy" enough to "throw" themselves in the air.

Military readers will be inspired by the authentic collections of early aviation photographs which are among the best ever published. This book is a valuable historical reference and should be a part of every military library.

THE BRIDGE AT REMAGEN. By Ken Hechler. 238 Pages. Ballantine Books, Inc., New York. \$4.50.

BY LT COL HAROLD E. BEATY, CE

Shortly after 1500, 7 March 1945, a small group of American infantrymen, engineers, and tank soldiers from the 9th Armored Division captured the Ludendorff Bridge at Remagen and crossed the Rhine River. From this unexpected victory developed momentous results. Field Marshal von Rundstedt was dismissed as Commander in Chief of the German Armies in the West, nearly 50,000 German soldiers were taken as prisoners of war, and the final defeat of Germany was brought weeks closer at the saving of thousands of Allied soldiers' lives.

The bridge at Remagen was wellmarked on maps and on photographs, and the Germans had made preparations to destroy it. Due to confusion, technical difficulties, and breakdown of command the bridge was not destroyed. Since it was assumed that it would be blown in the face of the advance of Allied forces, planners had not considered the bridge as a possible crossing site on the Rhine River.

Mr. Hechler carefully and skillfully has reconstructed the events which led to the capture of the Ludendorff Bridge.

Aside from its historical value, The Bridge at Remagen is filled with excellent examples of acts of outstanding leadership and personal bravery of both German and American soldiers. The author's research has made this book authentic and of considerable value to those seeking historical facts of World War II.

YOU AND YOUR LEADERS. Their Actions and Your Reactions, 1936-1956. By Elmo Roper. 288 Pages. William Morrow & Co., Inc., New York. \$3.95.

BY LT COL IRVING HEYMONT, Inf

This book centers upon nine recent American leaders, from Franklin D. Roosevelt to Dwight D. Eisenhower. It is a record of the shifting attitudes of the American public toward national leaders and issues as measured by Mr. Roper.

Effective history, it has been said, is what people believe happened rather than what did actually happen. Whether or not Mr. Roper's conclusions are valid, his book is only an interesting footnote to history rather than history.

The unreliability of public opinion polls is still too fresh in our minds. It is not necessary to go back to 1932 and the demise of the *Literary Digest*, as a result of predicting, based on their public opinion poll, that Mr. Hoover would be reelected. In 1948 all public opinion polls predicted that Mr. Truman would be defeated.

Mr. Roper's book is built around public opinion samplings. The results of these samplings have been well-publicized in the past in the newspapers. The book is well-written and will be of interest primarily only to the serious student of modern American history.

W

a

iı

b

The MI

no resp

AROUT

tion. It

cial end

THE GREAT DEMOCRACIES. Volume IV of "A History of the English-Speaking Peoples." By Winston S. Churchill. 403 Pages. Dodd, Mead & Co., Inc., New York. \$6.00.

BY LT COL GEORGE B. MACAULAY, Arty

This final volume of Churchill's History is particularly appealing to US military personnel. Not only is almost half the book devoted to American affairs, but the majority of this coverage is focused on our Civil War. Sir Winston writes in his usual inimitable informative manner. He clearly demonstrates his tremendous grasp of personalities and events to describe issues and battles. His original perspective and interpretations of our history are refreshingly invigorating.

However, Sir Winston's treatment of the Civil War, including its causes and results, is superb. The decisive military and political actions and their effects on each other are described comprehensively in comparatively few pages. The insidious pressures on the great military leaders are judged and analyzed cleverly. This book is a must for all thinking Americans.

THE CIVIL WAR. A Soldier's View. By Colonel G. F. R. Henderson. 323 Pages. The University of Chicago Press, Chicago, Ill. \$6.00.

BY LT COL RODGER R. BANKSON, Inf

This is a sparkling collection of comparatively unknown writings by a British Army officer who was one of the great military historians of all time. Some of Colonel Henderson's (1854-1903) classics have been assembled carefully and edited by Dr. Jay Luvaas. The actions at Fredericksburg, Gettysburg, and the Wilderness are analyzed in great detail.

However, the main value of this book to the military student or armchair strategist is the author's frank and considered opinions on military questions which are vital even today. For example, the following items are definitively discussed: "Minor Tactics" (formation and disposition of the three arms for attack and defense); "Grand Tactics" (problems of military policy, organization, and strategy); problems of a volunteer army; leadership and staff duties; mounted infantry versus cavalry; and the relative effectiveness of a professional army versus a volunteer army.

These opinions are deduced cleverly and written with verve. The author has left his mark on military thinking not only by his superb exposition of strategy but also by his psychology of leadership and morale.

NEW DEVELOPMENTS IN ARMY WEAPONS, TACTICS, ORGANIZATION, AND EQUIPMENT. By Captain Marvin L. Worley, Jr., Infantry. 261 Pages. The Military Service Publishing Co., Harrisburg, Pa. \$3.50.

BY LT COL ROBERT M. WALKER, Arty

The author has attempted, and very satisfactorily accomplished, the difficult task of presenting a condensed picture not only of new developments and equipment within the US Army, but also of trends on which the Army is working. Profusely illustrated, Army aviation and new equipment of the Engineers, Signal, Chemical, and Quartermaster Corps are treated in considerable detail. There also is a short chapter on current automotive equipment. The latest thinking in the field of tactics is adequately, if tersely, covered.

Although continuing developments undoubtedly will reduce the value of this book, it represents a tremendous research accomplishment and is about the only volume available with such a broad coverage of this subject area.

It will be invaluable to the military student and to active duty personnel, and especially useful to members of the Reserve components. Subscriptions to the MILITARY REVIEW may be obtained by writing directly to the Editor, Military Review, U. S. Army Command and General Staff College, Fort Leavenworth, Kansas. In the following countries subscriptions will be accepted at the addresses listed below:

#### **Argentina**

1958 Mi-

ion

e):

ary

ob-

nd av-

of

eer

nd

eft

nly

ut

nd

IY

rin

he

is-

1

ry

ılt

ot

nt

ds

ly

p-

in

rt

ıt.

cs

n-

h

1-

re

d d Círculo Militar, Buenos Aires.

#### Bolivia

Director, "Revista Militar," La Paz.

#### Brazil

Biblioteca do Exército, Ministério da Guerra, Rio de Janeiro.

#### Chile

Estado Mayor General del Ejército, Departamento de Informaciones, Santiago.

#### Colombia

Sección de Historia y Biblioteca del Estado Mayor General, Ministerio de Guerra, Bogotá.

#### Ecuador

Dirección de Publicaciones Militares del Estado Mayor General, Ministerio de Defensa, Quito.

#### El Salvador

Estado Mayor General de la Fuerza Armada, Departamento de Publicidad y Bibliografía, San Salvador.

#### Mexico

Escuela Superior de Guerra, Oficina de Divulgación Cultural Militar, San Jerónimo Lídice, D. F.

#### Nicaragua

Dirección de la Academia Militar, Managua.

#### Peru

#### Air Forces

Ministerio de Aeronáutica, Academia de Guerra Aérea, Lima.

#### **Ground Forces**

Ministerio de Guerra, Servicio de Prensa, Propaganda y Publicaciones Militares, Lima.

### **Portugal**

Revista Militar, Largo da Anunciada 9, Lisboa.

### Uruguay

Biblioteca de la Inspección General del Ejército, Montevideo.

#### Venezuela

Negociado de Publicaciones de la 2ª Sección del Estado Mayor General, Ministerio de la Defensa Nacional, Caracas.

.

The MILITARY REVIEW and the U.S. Army Command and General Staff College assume no responsibility for factual accuracy of information contained in the MILITARY NOTES AROUND THE WORLD and the FOREIGN MILITARY DIGESTS sections of this publication. Items are printed for the purpose of stimulating discussion and interest, and no official endorsement of the views, opinions, or factual statements is to be implied.—The Editor.

The Army Library
Department of Army
Room 1-A-522, The Pentagon
Washington, D.C.

"POWER FOR PEACE"

ARMED FORCES DAY 1958



#### DISTRIBUTION:

ACTIVE ARMY (OVERSEA DISTRIBUTION ONLY):
OS Maj Comd (50); OS Base Comd (10); Armies (25); Corps (10);
Div (10); Brig (5).
NG & USAR: None.